

Dear Reader,

SITS started as an internet-based registry for intravenous thrombolysis already in 1996. In 2002 it was given a broader international role when European Union authorities requested that all patients treated with thrombolysis should be registered in SITS for a period of three years.

Today, over 300 000 patient files are included from more than 80 countries in the SITS Registry. Ninety-six scientific reports have been published in international peer-reviewed journals based on SITS data, and many abstracts have been presented at different stroke conferences. This year, three abstracts based on SITS data have been accepted for presentation at ESO-WSO 2022 in Lyon, France: 2 oral and 1 e-poster presentation. Early in 2022, SITS launched a new data entry form for capturing data on cerebral venous thrombosis (CVT). The SITS CVT protocol enables documentation of risk factors, pathophysiology, clinical presentation etc. Due to the low incidence compared to arterial stroke, our aim is to enable SITS global network to capture high-volume real-world data on CVT. We hope that existing SITS centres will find the CVT protocol useful, and we encourage new centres to start using it.

Covid-19 has changed the world but also put an emphasis on the importance of science and research. SITS is primarily a research register but also provides the opportunity for individual centres to use SITS for quality control and benchmark their data with national and global data. With this annual report we provide an overview of the registry data, ongoing and planned activities. The publications based on data from the SITS Registry is merely possible through contribution from all SITS centres and users. SITS always welcome ideas for research projects and we have many exiting ongoing and upcoming projects.

We take the opportunity to acknowledge the contributions of more than 350 authors involved in SITS publications since its beginning. International, regional, national, and centre / Local Coordinators at participating centres are also acknowledged in this report, in the Appendix.

We thank our present and previous Scientific Committee members who oversee scientific activities within SITS and contribute with their expert knowledge. We thank all patients participating in the registry and all the hard-working local users who enter data in the registry. Finally, we are grateful to our team members at the SITS Coordination Office who have been involved in the preparation of this report.

Kind regards,



Niaz Ahmed
SITS Chairman



Nils Wahlgren
Previous SITS Chairman

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Prof. Nils Wahlgren, Sweden (Previous Chairman)
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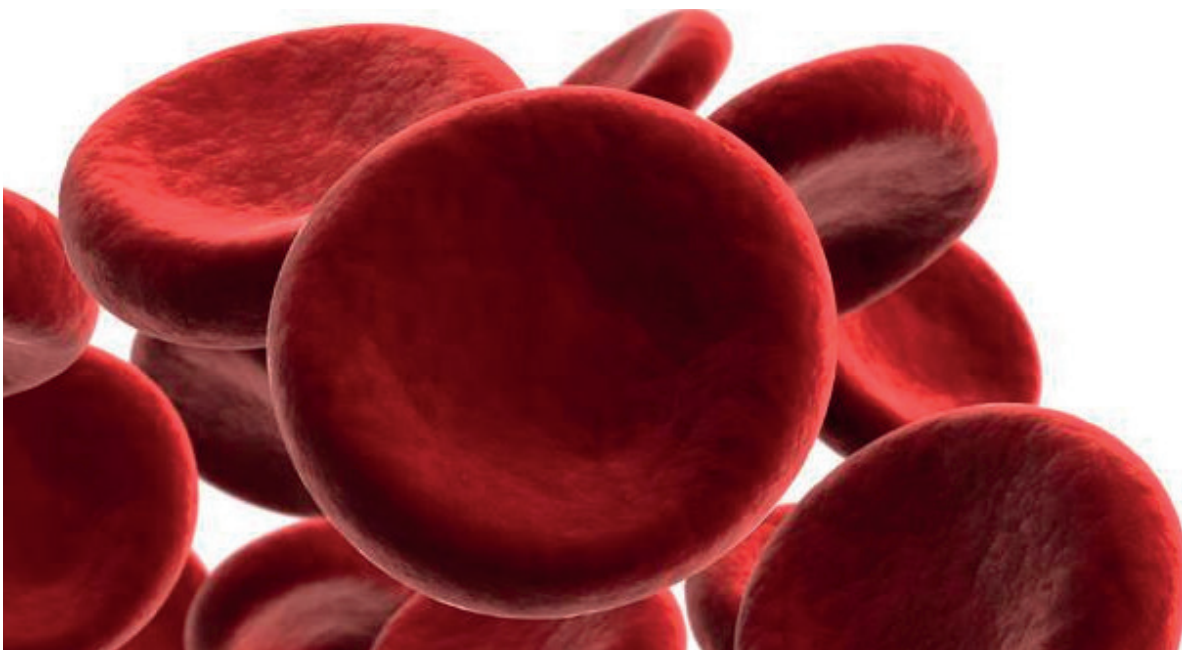


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Background and purpose

SITS (Safe Implementation of Treatment in Stroke) is a non-profit, research-driven, independent, international collaboration. It is an initiative by the medical profession to assure excellence in acute treatment and secondary prevention of stroke, as well as to facilitate clinical trials.

SITS started in 1996 as an initiative by participants in the European-Australian randomised stroke thrombolysis studies (ECASS). In 2002, the European Medicines Agency (then EMEA, currently EMA) endorsed SITS as the registry for follow-up on thrombolysis treatment in acute ischemic stroke. SITS has since developed its services to enable follow-up of other evidence-based treatments in acute stroke such as thrombectomy, as well as secondary prevention.

The purpose of this report is to demonstrate how the registry has developed since 2002 with updated data since the previous report of 2019 and summarize how SITS has contributed to the body of knowledge on modern stroke treatment. The time span of the presented data is December 2002 – December 2021, illustrating the growth of SITS over 19 years. 96 scientific articles based on SITS data have been published/are accepted for publication in peer reviewed journals since 2007, with more than 350 co-authors. This would not have been possible without the dedicated efforts of SITS national, regional, and Local Coordinators, as well as local users.

The SITS network is expanding. More than 1900 stroke centres in more than 80 countries on five continents have contributed with data to the registry. This makes SITS one of the world's largest stroke treatment databases and networks, with participation of many leading stroke experts.

Support and Funding

SITS is financed from an unrestricted sponsorship from Boehringer-Ingelheim. SITS has previously been financed directly and indirectly by grants from Karolinska Institutet, Stockholm County Council, the Swedish Heart and Lung Foundation, the Swedish Order of St. John, Friends of Karolinska Institutet, and private donors, as well as received grants from the European Union Framework 7, the European Union Public Health Authority and Ferrer Internacional. SITS has completed studies supported by EVER Pharma, as well as in collaboration with Karolinska Institutet, supported by the Swedish Heart and Lung Foundation, Stryker, Covidien, Phenox, Codman and Biogen. SITS is currently conducting studies supported by Biogen and Boehringer-Ingelheim.

SITS Studies

Completed Studies

SITS-MOST

An open, prospective, non-randomised observational study of safety and efficacy of treatment with intravenous rt-PA within 3 hours of onset of acute ischaemic stroke, based on the SITS International Stroke Thrombolysis Register. Performed in European Union countries.

SITS-NEW

An observational study of safety and efficacy of intravenous rt-PA within 3 hours of symptom onset in acute ischaemic stroke patients, according to the Summary of Product Characteristics (SPC) of the countries involved. Performed in India, People's Republic of China, Singapore and South Korea.

SITS-UTMOST

A prospective, post-approval registry study of intravenous rt-PA (0.9 mg/kg) up to 4.5 hours after symptom onset in acute ischaemic stroke patients. The study has been completed and the main results were published in the European Stroke Journal in 2016.

SITS-OPEN

An international, multicentre, prospective, controlled, blinded evaluation study of safety and efficacy of thrombectomy in acute occlusive stroke. The SITS-OPEN trial results were published in Stroke in 2021.

SITS Thrombectomy Studies

Implementation of thrombectomy in large artery occlusive stroke in routine clinical practice was published in 2021. Until now 6 scientific articles have been published based on thrombectomy data from the SITS Thrombectomy Registry.

SITS Dabigatran initiation Study

A retrospective study on timing of dabigatran initiation after acute ischaemic stroke was published in 2020.

Ongoing Studies / Projects

SITS AF Studies

A retrospective and prospective study to identify the safest and most effective time point for initiation of oral anticoagulation (OAC) following ischaemic stroke of different severity in patients with atrial fibrillation.

Preliminary results will be presented at ESOC 2022 by Malin Säflund (Sweden), E-Poster Online Library, Wednesday May 4th, 08:00 - 20:00.

A retrospective and prospective study to investigate the type, timing, safety, and reasons for choice of acute interventions in patients taking direct OACs or warfarin prior to stroke onset. This study shall also evaluate the use of idarucizumab in patients on dabigatran suffering acute stroke.

Intracerebral Haemorrhage (ICH) Registry and Network

Intracerebral haemorrhage is the most devastating form of stroke, with 30-day mortality reaching 50% and half of the survivors suffering from severe disability. With emerging treatments, new diagnostic techniques and updated management guidelines for ICH, there is a need for a large international collaborative registry to enable better follow-up, care quality assurance, and research studies in this field. We hope that the SITS ICH Registry will become a valuable tool and provide a network for clinicians and researchers striving to improve outcomes in the most severely afflicted stroke patients. Results from the SITS-ICH Registry will be published once sufficient amount of data is captured. Top recruiting centre coordinators will be invited to join as co-authors and all participating centres will be acknowledged as collaborators.

SITS IVT > 80 years Study

A prospective, post-approval registry of intravenous rt-PA (0.9 mg/kg) in acute ischaemic stroke patients over 80 years within the SITS-ISTR Registry. Although IVT in patients > 80 years has been used off-label in many countries, treatment in patients > 80 years will probably increase further after approval. The SITS-ISTR provides an instrument for continuous monitoring of thrombolysis treatment in stroke and provides a technical platform for the SITS > 80 years post-approval study. At least 1000 patients from approximately 60 European sites will be included in this prospective study.

SITS IVT Paediatric Study

Until recently, IVT with alteplase was not approved in patients with acute ischaemic stroke aged under 18 years. Based on observational data, regulatory authorities in several countries have now approved use of IVT with alteplase in patients 16-18 years if other Summary of Product Criteria (SmPC) are fulfilled. Regulatory authorities have requested monitoring of treatment in this age group, SITS will therefore perform a study of IVT in patients with acute ischaemic stroke aged 16-17 years. The study protocol is approved by the Swedish ethics committee.

SITS Cerebral Oedema Study

Large hemispheric infarction often leads to high morbidity and mortality, and real-world data on clinical management, outcomes and healthcare utilization is limited. There is also a growing interest in understanding the efficacy and effectiveness on thrombectomy in patients with large infarcts. The number of incidents, current clinical management, recurrent strokes and functional outcomes, including how thrombectomy modifies the risk of cerebral oedema in patients with large hemispheric infarction, forms the basis for this study.

SITS Tenecteplase Study

The SITS Tenecteplase in Ischemic Stroke Monitoring Study: the option to use tenecteplase as IVT therapy in acute ischemic stroke has been implemented in the SITS IVT Registry for a few years already. Initial results of the safety and outcome of intravenous tenecteplase in acute stroke in routine clinical use has been submitted for publication. The results will be presented as an oral presentation at ESOC 2022 by Aristeidis Katsanos (Canada), Wednesday May 4th, 08:35 - 08:43: Scientific Communications 6 - Intravenous Thrombolysis

SITS-Thrombectomy in large artery occlusive stroke with minor stroke symptom

Safety and efficacy of endovascular thrombectomy plus intravenous thrombolysis versus intravenous thrombolysis alone in mild symptoms stroke with large vessel occlusion: propensity score matched analysis. The results will be presented at ESOC 2022 by Ghil Schwarz (Italy), Wednesday May 4th, 17:45 - 17:53: Scientific Communications 24 - Hyperacute Management

SITS Fertile Woman Study

A retrospective and prospective study of intravenous rt-PA (0.9 mg/kg) given up to 4.5 hours after symptom onset in female acute ischaemic stroke patients, aged between 13 and 50 years, with particular focus on pregnancy and menstruation.

SITS Collaborative Project ESO-Angels / WSO-Angels

The European Stroke Organisation (ESO) and World Stroke Organisation (WSO) is currently implementing a Europe-wide and a world-wide project respectively, aiming to stimulate high quality in stroke management by awarding excellent performance in key quality factors such as high proportion of ischaemic stroke patients undergoing reperfusion treatment, door-to-needle time, and proportion of patients treated in stroke units. Based on requests from numerous SITS users, we created the SITS-Quality Registry (SITS-QR) which can be used by SITS centres, including those participating in the ESO-Angels Award Program or the Angels Program outside ESO member countries.

SITS Collaboration Project AHA/ASA

SITS is collaborating with the American Heart Association/American Stroke Association (AHA/ASA) on a certification program to evaluate and provide hospitals with needed tools and support to achieve long-term success in improving stroke patient outcomes. Through this robust performance improvement program and dedicated staff, centres can achieve the goal to provide high quality stroke care. Certification helps put a framework in place to guide the journey. Currently this program has been launched in collaboration with AHA/ASA and Middle East and North Africa Stroke Organization (MENASO).

Monitor ISA

SITS is the national stroke registry in Italy and Italian centres use SITS-QR for ESO-Angels Award program. SITS has been working closely with Professor Danilo Toni and the Italian Angels representatives to develop and translate a new add-on to the SITS-QR protocol.

SITS QR Latin America

In 2021, SITS developed a new add-on to the SITS QR protocol in collaboration with Tony Fabian Alvarez Guzman and Sheila Martins from Brazil. This add-on gives centres the opportunity to register data not only for the Angels award, but also for the WSO certification program, Certificación de los Centros de ACV en Latinoamérica.

SITS APNA-MERIT Collaboration

SITS has started a collaboration with the Association of Physicians of Pakistani Descent of North America and Medical Education, Research, International Training and transfer of Technology (the APNA-MERIT organization). Together with SITS, a new ground-breaking research project is focusing on medical education and quality improvement in stroke care in Pakistan.

Planned Projects

SITS Seizure Study

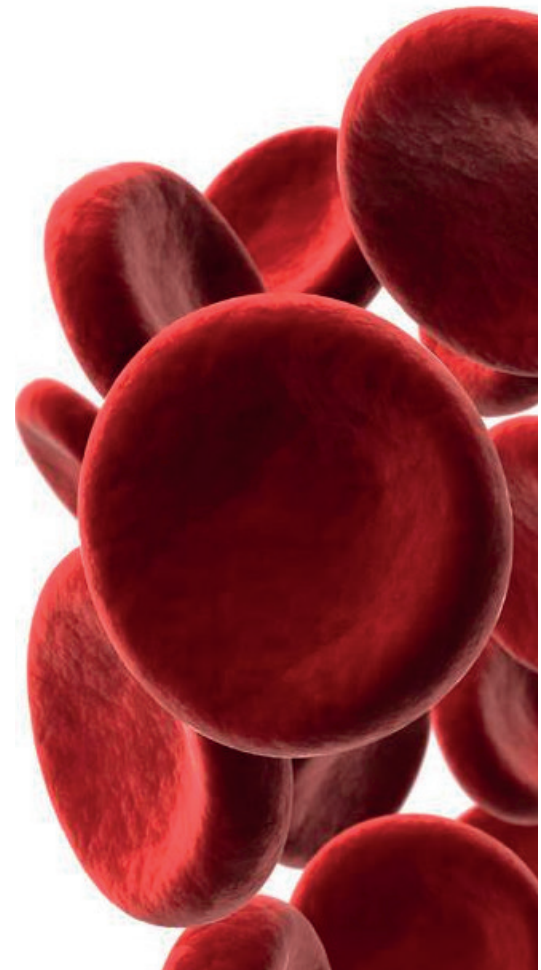
A prospective study of seizures in acute stroke patients treated with intravenous rt-PA (0.9 mg/kg) up to 4.5 hours after symptom onset.

SITS IVT Wake-up Stroke Study

SITS has published one article on IVT in patients with unknown stroke symptom onset. However, the main weakness of the study was missing data on whether the unknown onset time was due to wake-up stroke, the last known well time being known, or truly unknown timepoints. Relevant variables have been added to the registry and data collection is ongoing. Top recruiting centre coordinators will be invited to join as co-authors.

SITS Low-dose IVT Study

In many Asian countries, 0.6 mg/kg bodyweight IVT thrombolysis is given instead of 0.9 mg/kg. Although the ENCHANTED trial did not show noninferiority of low-dose alteplase compared to standard-dose alteplase with respect to death and disability at 90 days, significantly fewer symptomatic intracerebral haemorrhages with low-dose alteplase occurred. SITS has now added the option to specify the alteplase dose and data collection is ongoing.



SITS Registries / Data entry forms / Protocols

A range of SITS data entry forms allow centres to collect data on patients receiving treatments during the acute stroke phase, care quality parameters and long-term outcomes.

SITS data entry protocols are electronic forms that are automatically enabled in the registry depending on the chosen acute phase intervention. SITS protocols can also be downloaded as Case Record Forms in PDF format on the SITS website.

Current Registries / Data entry forms / Protocols

Thrombolysis Registry (IVT data entry forms)

- Suitable for all stroke patients treated with IV thrombolysis.
 - **Intravenous Thrombolysis Protocol, standard version (IVTP-s)**
 - protocol for registering stroke patients treated with IV thrombolysis.
 - **Intravenous Thrombolysis Protocol, minimal version (IVTP-m)**
 - protocol for registering all stroke patients treated with IV thrombolysis. The minimal version omits certain variables at various time points, making the protocol less extensive compared to IVTP-s.

General Stroke Registry (APP data entry forms)

- Suitable for any stroke and TIA patients who have not received IV thrombolysis or thrombectomy or for centres which do not use the IV thrombolysis or thrombectomy registries.
 - **All Patients Protocol, standard version (APP-s)**
 - protocol for registering stroke and TIA patients who have not been treated with IV thrombolysis or thrombectomy or for centres which do not use the IV thrombolysis or thrombectomy registries.
 - **All Patients Protocol, minimal version (APP-m)**
 - protocol for registering stroke and TIA patients who have not been treated with IV thrombolysis or thrombectomy. The minimal version omits certain baseline and imaging variables, 2-, and 24-hour follow-up.

Thrombectomy Registry (TBY data entry forms)

- Suitable for all stroke patients treated with thrombectomy.
 - **Thrombectomy Protocol, standard version (TBYP-s)**
 - protocol for registering stroke patients treated with thrombectomy with (bridging protocol) or without prior treatment with IV thrombolysis.
 - **Thrombectomy Protocol, minimal version (TBYP-m)**
 - protocol for registering stroke patients treated with thrombectomy without prior treatment with IV thrombolysis. The minimal version omits certain variables.

Atrial Fibrillation and Oral Anticoagulation in Acute Stroke and TIA Registry

- Suitable for all patients admitted to hospital with an acute ischemic stroke or TIA, diagnosed with atrial fibrillation. The registry provides additional data entry options for details surrounding atrial fibrillation and the use of oral anticoagulation for secondary stroke prevention.

SITS Quality Registry (SITS-QR)

- Suitable for some SITS centres, which prefer a short and simple stroke care quality registry protocol completed in 5 minutes. Can be used by centres in western European countries participating in the ESO-Angels Award Program or the Angels Program outside ESO member countries.

SITS Intracerebral Haemorrhage Registry (SITS ICH)

- Suitable for all stroke patients suffering intracerebral haemorrhage and/or intraventricular haemorrhage. The layout and data entry form for the SITS ICH Registry is different than the traditional SITS registry data entry form. Our aim with the new layout is to simplify data entry.

SITS COVID-19 specific variables

- SITS received a request from investigators to add COVID-19 specific variables to the data entry forms. We prioritized this project considering the global pandemic and the COVID-19 variables were launched in June 2020.

SITS Cerebral Venous Thrombosis Registry (SITS CVT)

- This data form was launched February 2022 and enables documentation of CVT risk factors, aetiology, management, and outcomes of patients.

SITS World Map

**A**

Albania
Algeria
Argentina
Armenia
Australia
Austria

B

Bahrain
Belgium
Bermuda
Bolivia
Bosnia and
Herzegovina
Brazil
Bulgaria

C

Chile
China
Colombia
Costa Rica
Croatia
Cyprus*
Czech Republic

D

Denmark
Dominican Rep.

E

Ecuador
Egypt
El Salvador
Estonia
Ethiopia*

F

Finland
France

G

Germany
Greece
Guatemala

H

Honduras
Hong Kong
Hungary

I

Iceland
India
Iran
Ireland
Israel
Italy

J

Japan

K

Kazakhstan
Kenya*
Kuwait
Kyrgyzstan

L

Lebanon
Libya
Lithuania

M

Malta*
Mexico
Moldova, Rep of
Montenegro
Morocco

N

Netherlands
New Zealand
Nicaragua
Nigeria
North Macedonia
Norway

O

Oman

P

Pakistan
Panama
Paraguay
Peru
Philippines
Poland
Portugal

Q

Qatar

R

Romania
Russian
Federation

S

Saudi Arabia
Serbia
Singapore
Slovakia
Slovenia
South Africa*
South Korea
Spain
Sri Lanka
Sudan*
Sweden
Switzerland

T

Tanzania*
Thailand
Tunisia
Türkiye

U

Ukraine
United Arab
Emirates
United Kingdom
Uzbekistan*
Uruguay

V

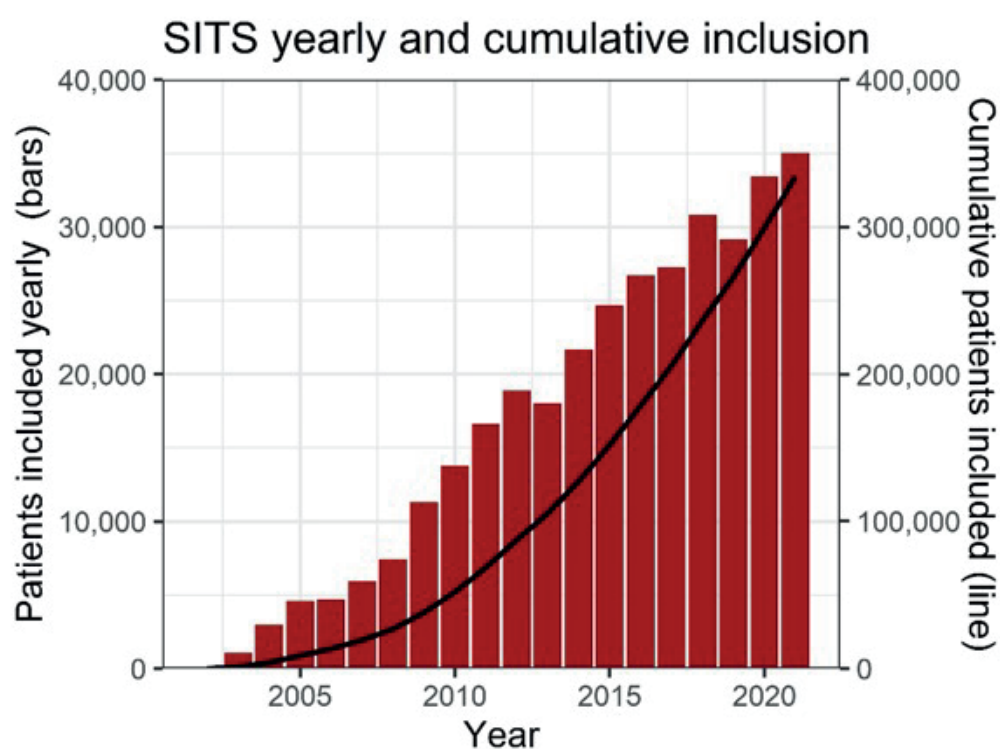
Venezuela
Vietnam

* Not yet recruiting
patients

General SITS data overview

Data presented in this general overview is based on all patient files entered in the SITS registries between December 25, 2002 and December 31, 2021. Patient recruitment is calculated using unique patient files with both confirmed and unconfirmed data.

Figure 1. Yearly and cumulative patient recruitment in SITS: line is showing cumulative inclusion, bars are yearly inclusion



*See the Appendix for patient recruitment per country

Table 1. Top 20 recruiting countries

Rank	Country	Patients	Rank	Country	Patients
1	Italy	91 395	11	Germany	8 198
2	Czech Republic	33 093	12	Slovakia	7 155
3	United Kingdom	28 638	13	Portugal	6 755
4	Brazil	17 360	14	Estonia	5 643
5	Sweden	12 256	15	Qatar	5 293
6	Iran	11 570	16	Spain	5 143
7	Poland	9 571	17	Bulgaria	5 064
8	Belgium	9 157	18	Russian Federation	4 446
9	India	8 824	19	Lithuania	4 241
10	Egypt	8 798	20	Finland	4 086

Table 2. Number of patients registered as per SITS data entry forms / protocols

Protocol	Patients
IVT	205 965
IVT + TBY treated	13 226
TBY	9 865
APP	100 909
QR	61 702
Total	391 667

SITS Thrombolysis Registry

Data based on all patient files entered between December 25, 2002 and December 31, 2021 using the standard and minimal SITS IV Thrombolysis protocols. Patient recruitment is calculated using unique patient files with both confirmed and unconfirmed data.

Figure 2. Cumulative and annual registration of patients using IV thrombolysis protocols, line is showing cumulative inclusion, bars are yearly inclusion

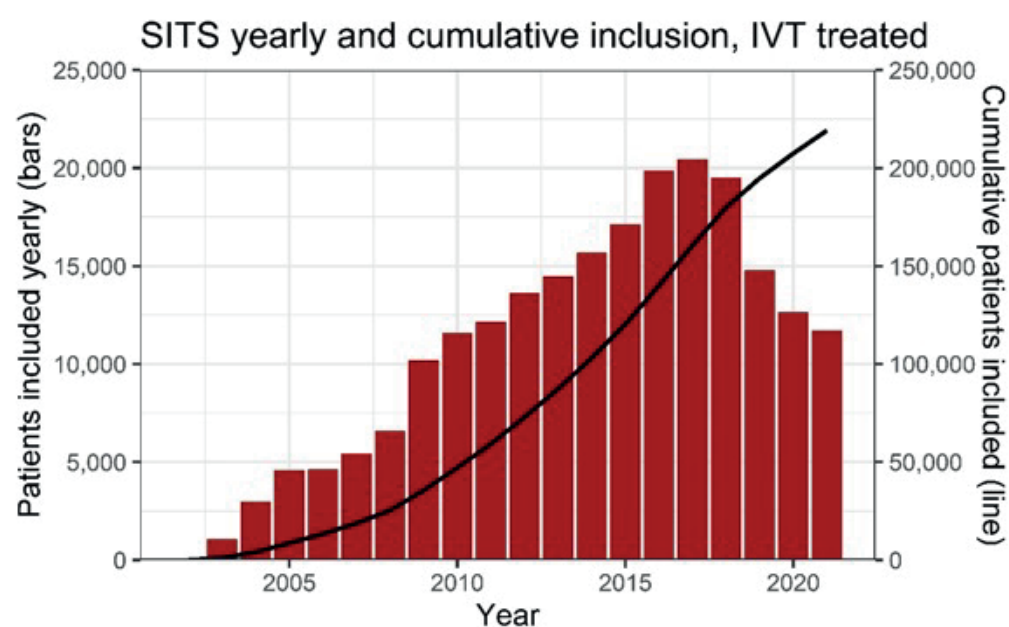


Figure 3. Change in median age per year in patients during the last 20 years with acute ischaemic stroke treated with IVT

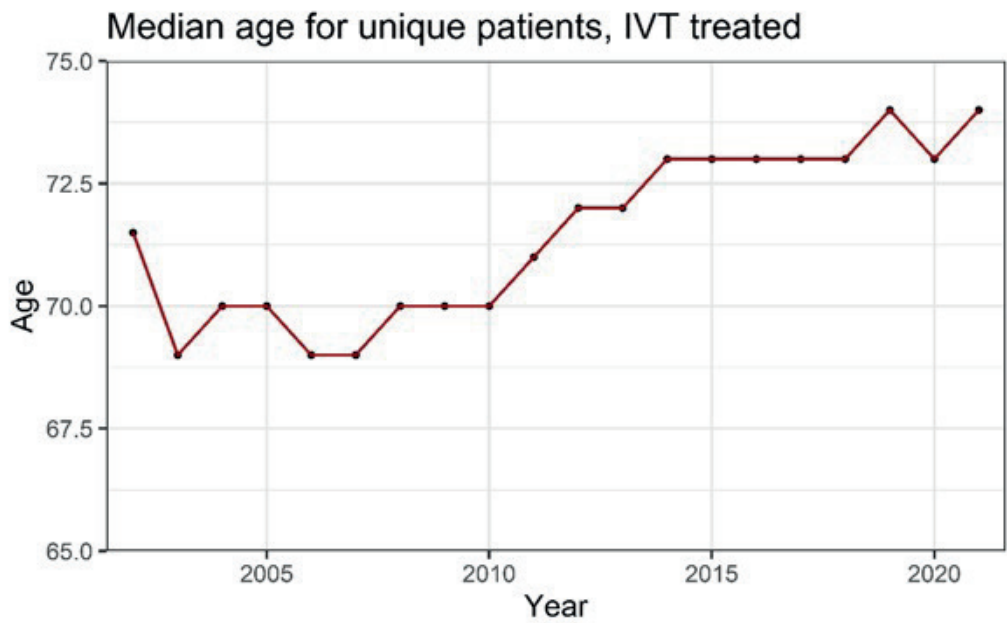


Figure 4. Change in median NIHSS score per year during the last 20 years in patients with acute ischaemic stroke treated with IVT

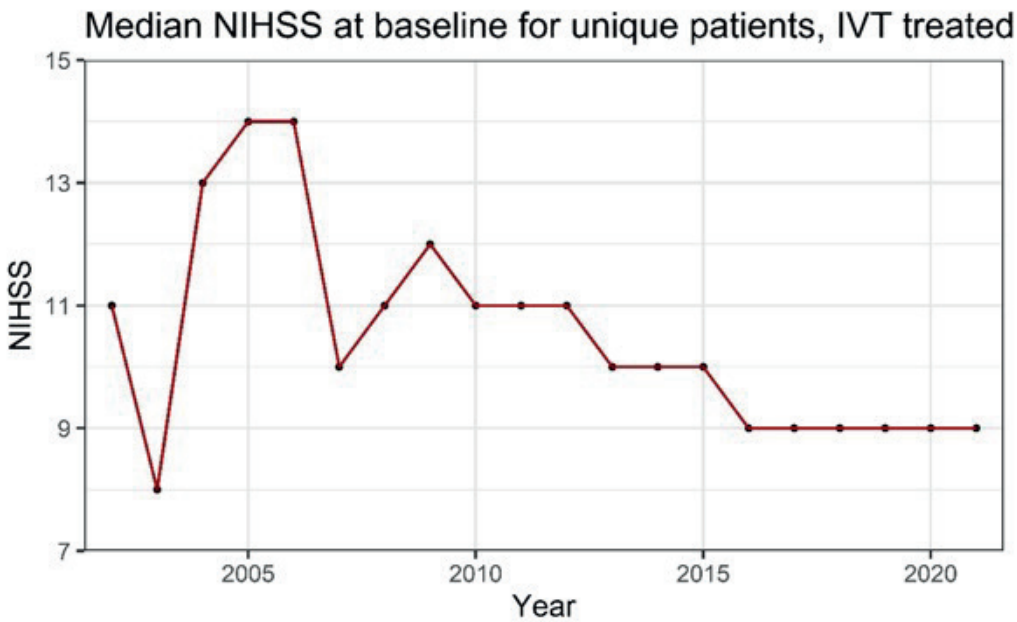
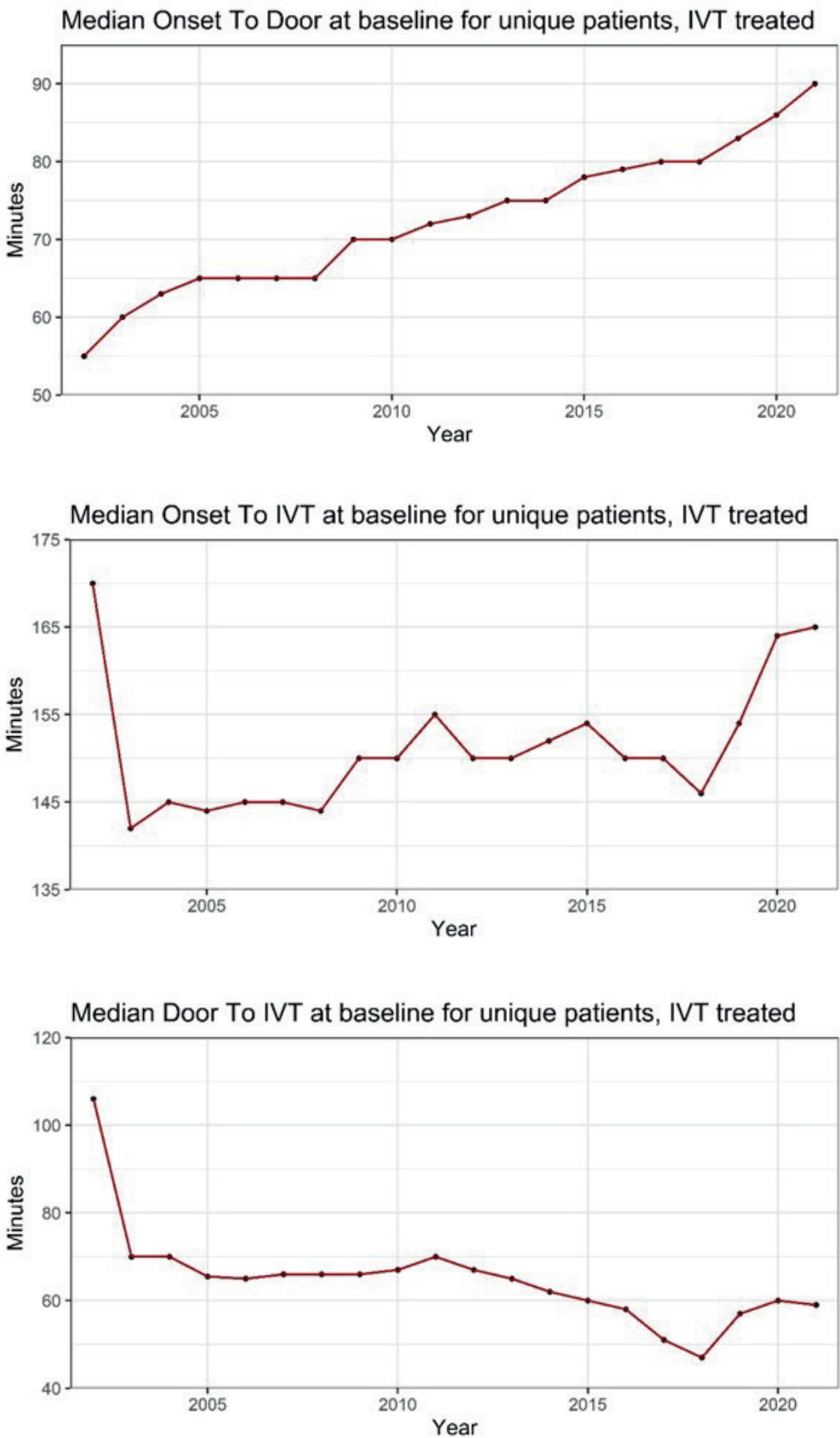


Figure 5. Change in median time logistics in minutes in IV thrombolysis treated patients - Onset to Door (OTD), Onset to Treatment (OTT) and Door to Needle (DTN)



Outcome data

Intracerebral haemorrhage in patients treated with IVT

In the table below, frequency of intracerebral haemorrhage (ICH) of various types, and of symptomatic intracerebral haemorrhage (SICH) by three definitions, in patients treated with IV thrombolysis is presented. Data is based on more than 300.000 patients.

Table 3. Proportions of patients with intracerebral haemorrhage*

ICH	Proportion	SICH	Proportion
HI1	4,5%	SICH SITS-MOST	1,7%
HI2	3,1%	SICH ECASS II	4,5%
PH1	2,6%	SICH NINDS	6,3%
PH2	2,7%		
PHr1	1,9%		
PHr2	1,0%		

*Data from 2019

ICH Definitions

Haemorrhagic infarction type 1 (HI1): small petechiae along the margins of the infarct.

Haemorrhagic infarction type 2 (HI2): confluent petechiae within the infarcted area without space-occupying effect.

Parenchymal haemorrhage type 1 (PH1): local, or intra-ischemic confluent hematoma in $\leq 30\%$ of the infarcted area with at the most some slight space-occupying effect.

Parenchymal haemorrhage type 2 (PH2): local, or intra-ischemic confluent hematoma $>30\%$ of the infarcted area with a substantial space-occupying effect.

Remote parenchymal haemorrhage type 1 (PHr1): small to medium sized hematoma located remote from the infarct(s), with mild space occupying effect.

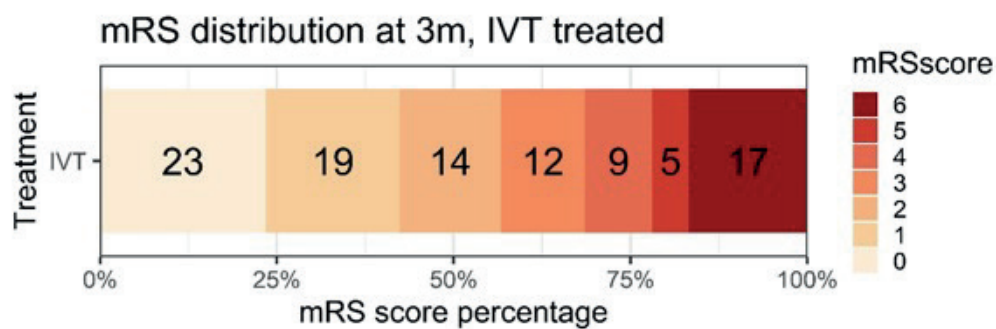
Remote parenchymal haemorrhage type 2 (PHr2): large confluent hematoma in an area remote from the actual infarct(s), with substantial space occupying effect.

SICH Definitions

SICH per ECASS II: Any haemorrhage with neurologic deterioration as indicated by an increase in NIHSS ≥ 4 compared to baseline or the lowest value within 7 days, or any haemorrhage leading to death.

SICH per NINDS: Any intracerebral haemorrhage on any post-treatment imaging scans combined with any decline in neurologic status as measured by NIHSS between baseline and 7 days.

Figure 6. Outcome at 3 months in IVT treated patients



Data shows the distribution of patients on the modified Rankin Scale (mRS) as assessed at three months after the acute stroke.

Table 4. Outcome at 3 months in IVT treated patients

Outcome within 3 months	Proportion
Excellent outcome (mRS 0-1)	42,4%
Functional independence (mRS 0-2)	56,7%
Death	16,3%

SITS Thrombectomy Registry

Data based on all patient files entered between 2014 and December 31, 2021, using the SITS protocols for thrombectomy and bridging of thrombectomy with IV thrombolysis. Patient recruitment is calculated using unique patient files with both confirmed and unconfirmed data. Data collection using the thrombectomy protocols is ongoing and will be used in upcoming studies.

Figure 7. Yearly and cumulative registration of patients using thrombectomy protocols, line is showing cumulative inclusion, bars are yearly inclusion

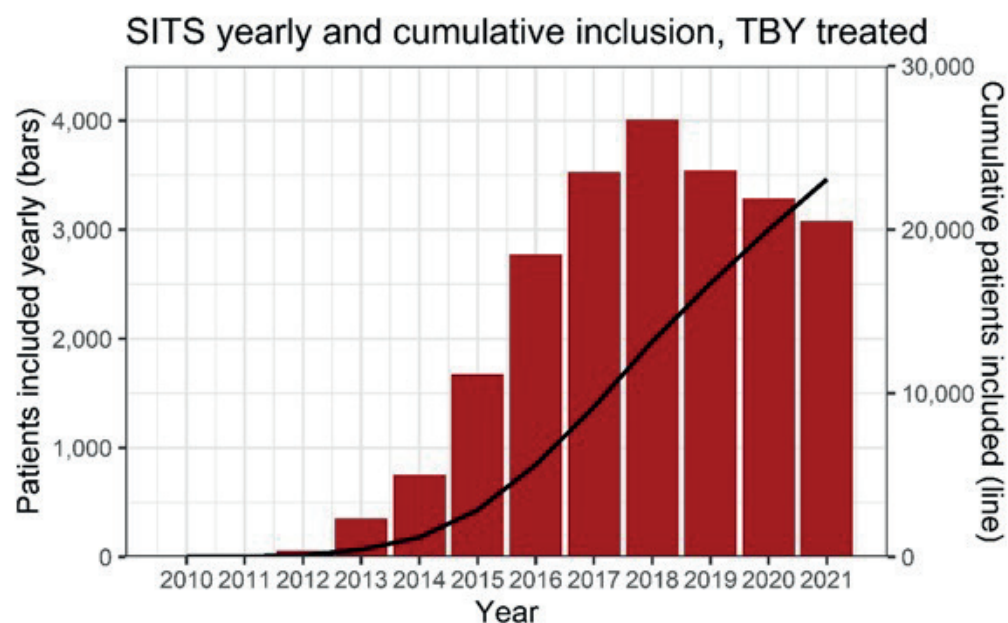


Table 5. Top 20 patient recruitment by country, thrombectomy protocols

Rank	Country	Patients	Rank	Country	Patients
1	Italy	8 089	11	United Kingdom	534
2	Czech Republic	3 510	12	Türkiye	406
3	Portugal	2 352	13	Poland	234
4	Sweden	1 203	14	Germany	177
5	Slovakia	1 110	15	Greece	148
6	Estonia	1 010	16	India	126
7	Belgium	1 008	17	Russian Federation	116
8	Lithuania	986	18	Egypt	100
9	Spain	895	19	Brazil	86
10	Finland	748	20	United Arab Emirates	60

TBY trends

Figure 8. Change in median age per year in patients with acute ischaemic stroke treated with TBY

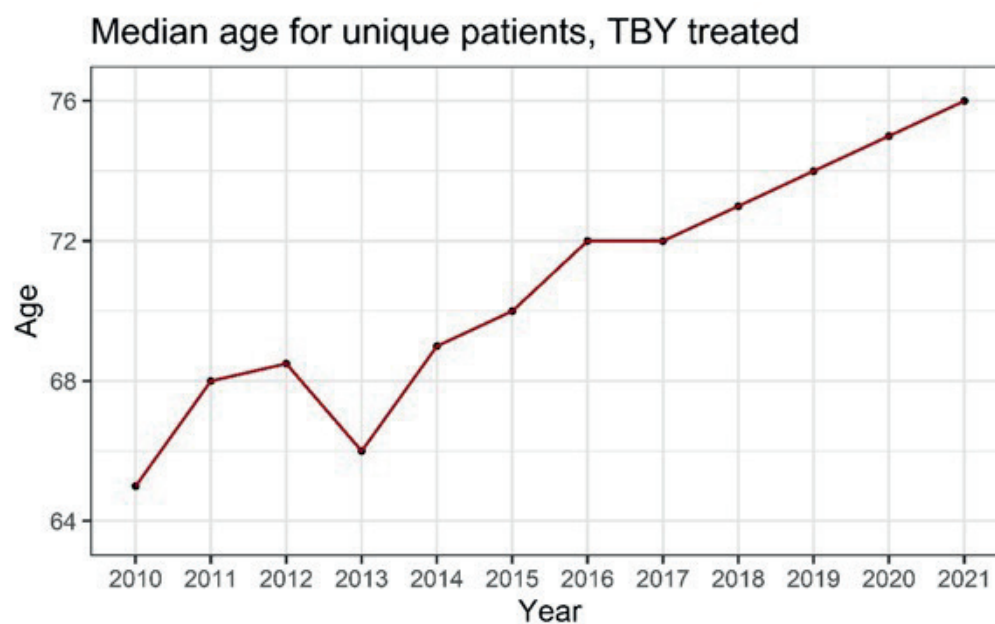


Figure 9. Change in median NIHSS score per year in patients with acute ischaemic stroke treated with TBY

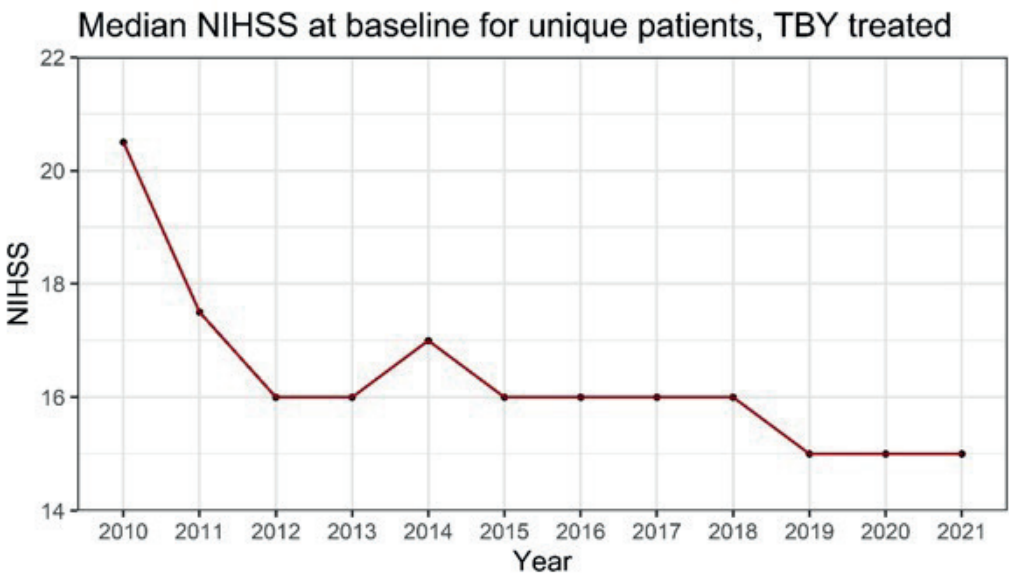
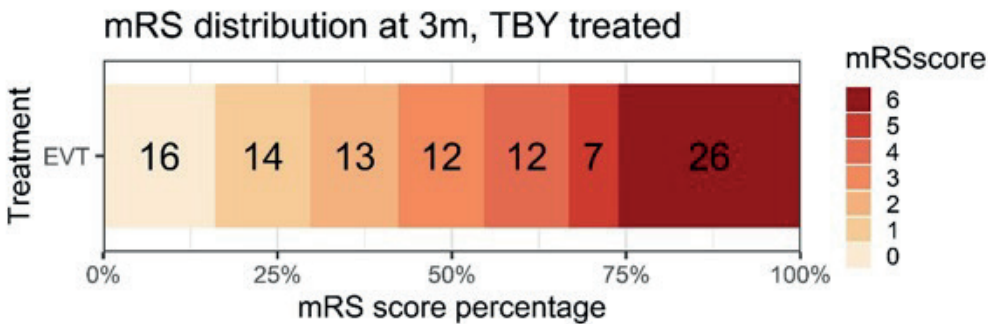


Figure 10. Outcome at 3 months in TBY treated patients



SITS General Stroke Registry

The SITS general registry is aimed at registering all stroke and TIA patients. Recruitment numbers presented are based on unique patient files with confirmed and unconfirmed data entered until December 31, 2021.

Figure 11. Annual global recruitment, line is showing cumulative inclusion, bars are yearly inclusion

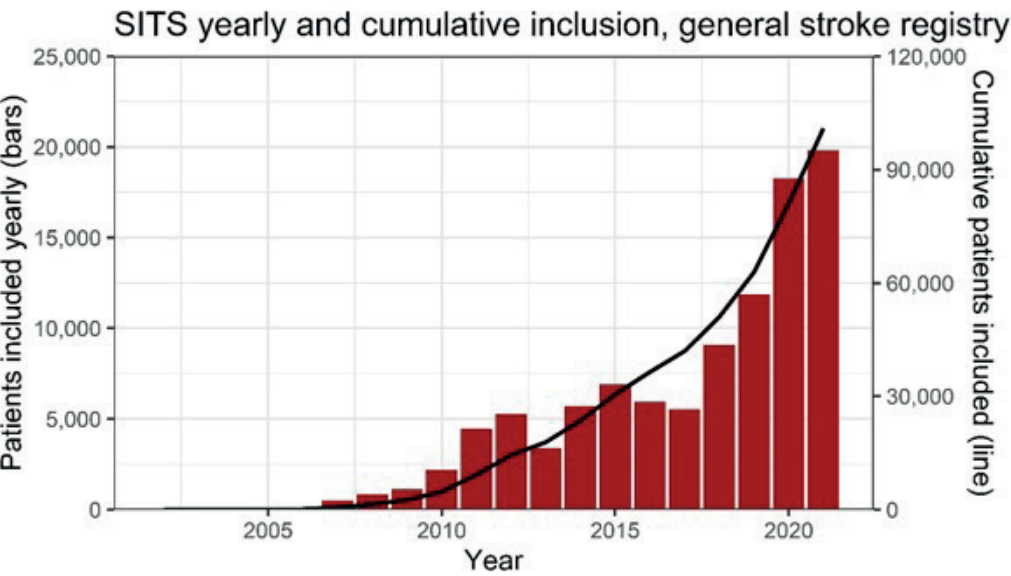


Table 6. Top 30 recruiting countries, general stroke protocols

Rank	Country	Patients	Rank	Country	Patients
1	Italy	20 325	16	Poland	1 663
2	Brazil	13 716	17	Türkiye	1 580
3	India	7 664	18	Moldova	1 506
4	Egypt	6 896	19	Kyrgyzstan	1 479
5	Iran	4 682	20	Chile	1 419
6	Qatar	4 497	21	Argentina	1 130
7	Bulgaria	4 179	22	Australia	1 012
8	Tunisia	3 189	23	Mexico	975
9	Belgium	3 184	24	Morocco	917
10	Russian Federation	3 053	25	Germany	774
11	Peru	2 284	26	United Kingdom	681
12	Sweden	2 233	27	Thailand	668
13	Sri Lanka	2 167	28	Slovakia	578
14	Venezuela	2 059	29	Czech Republic	513
15	United Arab Emirates	1 751	30	Dominican Republic	448

SITS EAST

SITS–EAST is a regional network in Central and Eastern Europe.

It started as a study of implementation of evidence-based stroke therapy supported by the SITS International Registry. The registry was initiated in autumn 2007 with the support of a European Union grant. It is now an ongoing registry for the documentation and statistical evaluation of stroke management in Eastern Europe.

Contributing countries*:

Albania, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Kazakhstan, Kyrgyzstan, Lithuania, Macedonia, Moldova, Poland, Romania, Russian Federation, Slovakia, Slovenia, Türkiye, Ukraine, Bosnia and Herzegovina, Armenia, Serbia

Figure 12. Cumulative recruitment SITS-EAST – all protocols, line is showing cumulative inclusion, bars are yearly inclusion

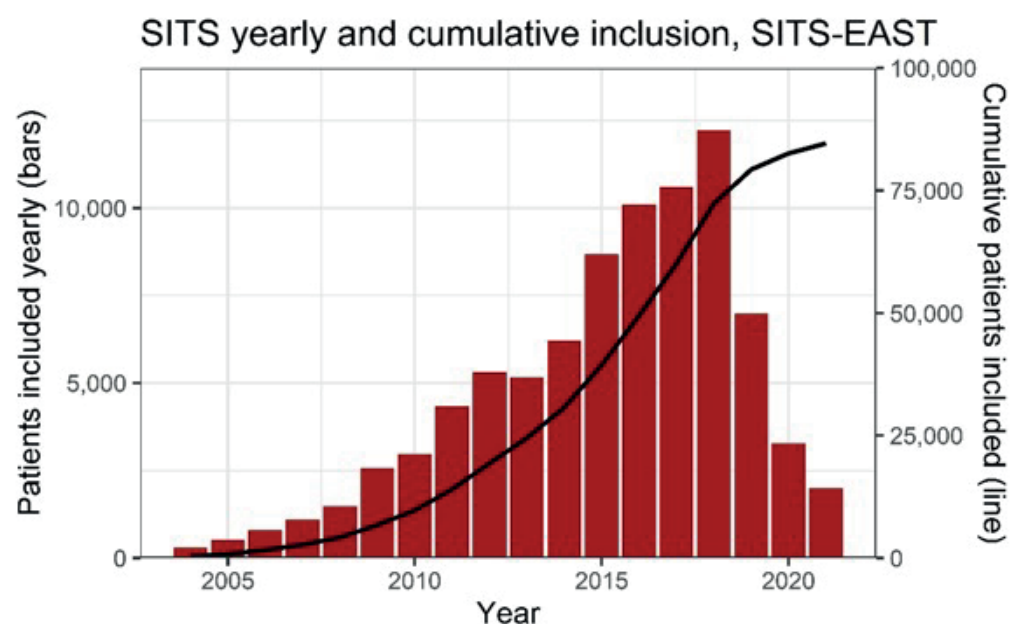


Table 7. Number of patients registered using SITS protocols in SITS-EAST

Data entry forms	Number of patients
TBY Protocols	2 613
IVT Protocols	60 221
IVT + TBY Protocols	4 955
APP Protocols	15 428
QR Protocols	1 376
Total	84 593

SIECV-SITS

The SIECV-SITS Registry was initiated through a joint venture by Sociedad Iberoamericana de Enfermedades Cerebrovasculares (SIECV) and SITS. The SIECV-SITS Stroke Registry is a database for documentation and statistical evaluation of stroke management in Central and Latin America. Recruitment numbers presented are based on patient files with confirmed and unconfirmed data, entered until December 31, 2021. Since 2018, Sheila Martins is appointed International Regional Coordinator for SIECV-SITS.

Contributing countries*:

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela.

**See the Appendix for contributing centres.*

Figure 13. Annual recruitment SIECV-SITS – all protocols, line is showing cumulative inclusion, bars are yearly inclusion

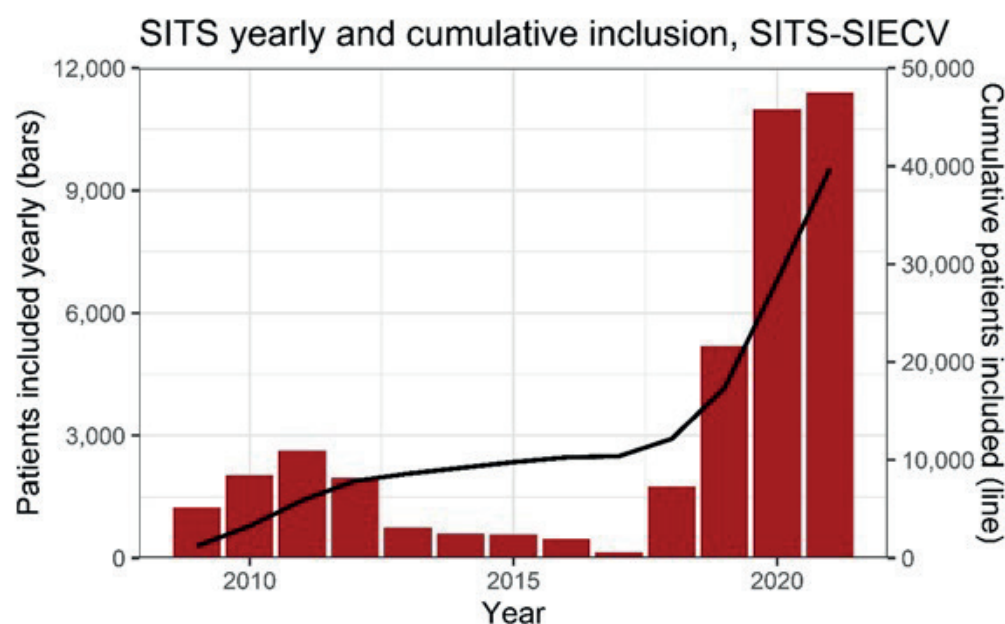


Table 8. Number of patients registered using SITS protocols in SIECV-SITS

Data entry forms	Number of patients
TBY Protocols	67
IVT Protocols	3 931
IVT + TBY Protocols	28
QR Protocols	13 743
APP Protocols	21 961
Total	39 730

SITS Sub-Saharan Africa

The SITS Sub-Saharan Africa is a regional network south of Sahara. Since 2018, Foad Abd-Allah functions as the International Regional Coordinator for SITS Sub-Saharan Africa.

Contributing countries*:

Ethiopia, Kenya, Nigeria, Tanzania

**See the Appendix for contributing centres.*

Figure 14. Annual recruitment SITS Sub-Saharan Africa, line is showing cumulative inclusion, bars are yearly inclusion

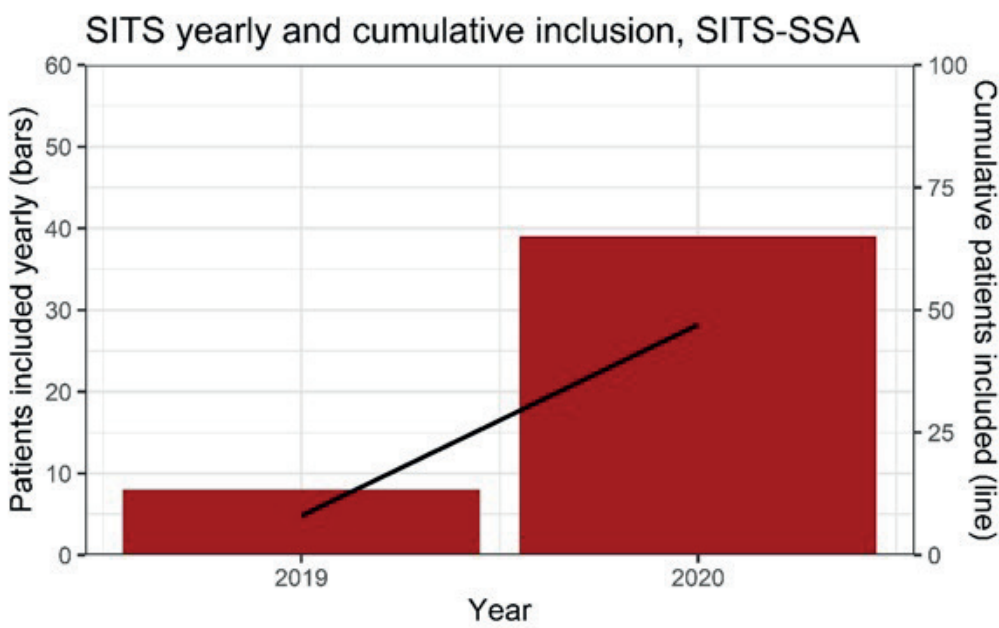


Table 9. Number of patients registered using SITS protocols in SITS Sub-Saharan Africa

Data entry forms	Number of patients
APP Protocols	47

SITS-MENA

The SITS-MENA Registry was initiated in 2013 as part of the SITS Regional Network in the Middle East and North Africa. Several countries and centres in the Regional Network are also participating in a prospective observational study of ischemic stroke in the region. Recruitment numbers presented are based on patient files with confirmed and unconfirmed data, entered until December 31, 2021. Since 2018, Suhail Al Rukn functions as the International Regional Coordinator for the SITS MENA region. The SITS MENA group started during 2021 and 2022 three studies based on IVT, TBY and CVT data in SITS.

Contributing countries*:

Algeria, Egypt, Iran, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, Kuwait, Sudan, Bahrain

*See the Appendix for contributing centres.

Figure 15. Annual recruitment SITS-MENA – all Protocols, line is showing cumulative inclusion, bars are yearly inclusion

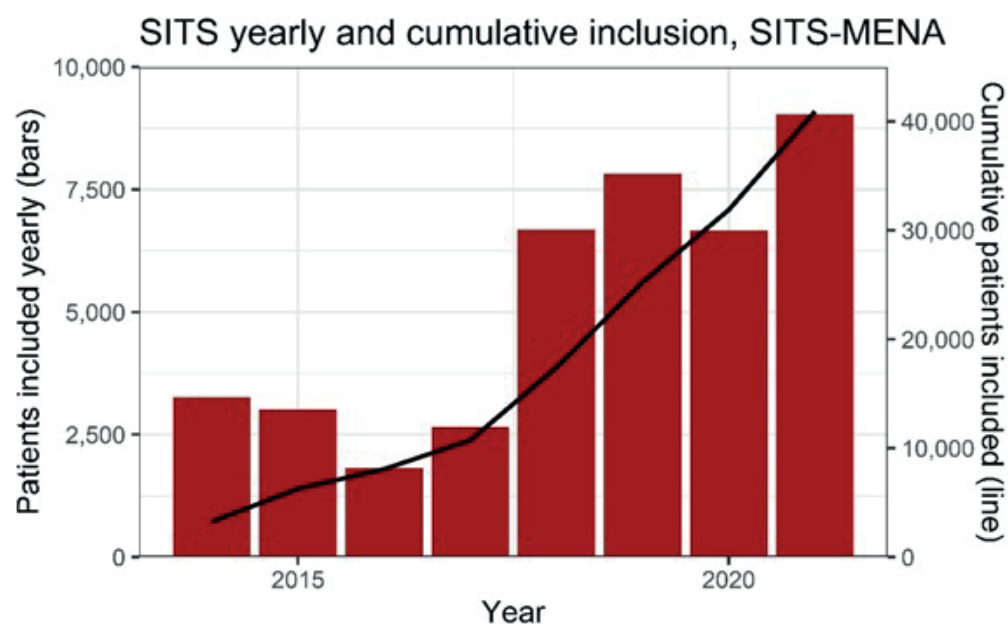


Table 9. Number of patients registered using SITS protocols in SITS-MENA

Data entry forms	Number of patients
TBY Protocols	92
IVT Protocols	6 395
IVT + TBY Protocols	119
APP Protocols	21 763
QR Protocols	12 561
Total	40 930

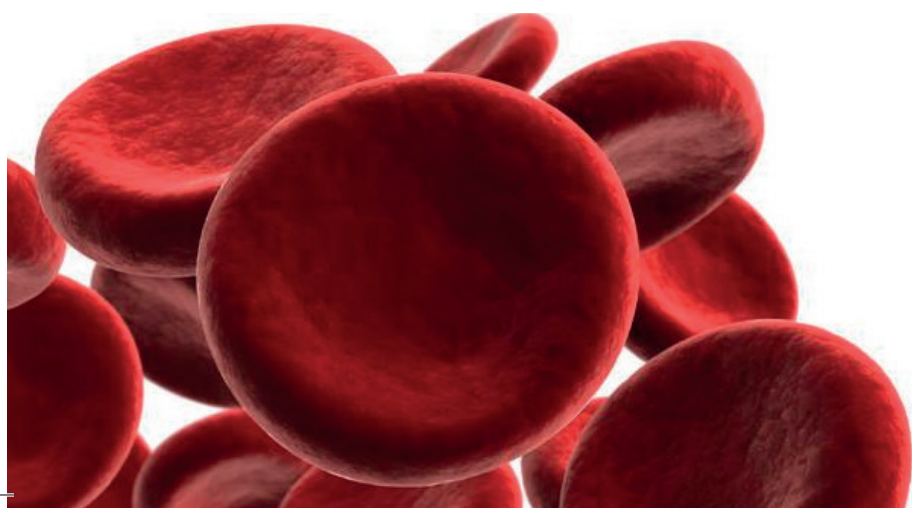
SITS Top centres 2020 and 2021

Each year, SITS points out the top 20 centres fulfilling the highest standards of data collection into the SITS Registry over the last year (2020 and 2021). The SITS Top Centres list is initiated to encourage centres to continue enter high quality data into the SITS Registry and in keeping with our mission - to assure excellence in acute treatment and secondary prevention of stroke, as well as to facilitate clinical research.

The following centres received a diploma as the 2020 and 2021 top centre in SITS using the IVT/TBY/APP protocols:

IVT protocol Top Centres 2021

1. Hospital Sao Jose – PORTUGAL
LC: Ana Paiva Nunes
2. Newcastle upon Tyne Hospitals NHS Foundation Trust – UNITED KINGDOM
LC: Anand Dixit
3. North Estonia Medical Centre – ESTONIA
LC: Viiv-Marika Rand
4. Morriston – UNITED KINGDOM
LC: Manju Krishnan
5. Imam Reza – IRAN
LC: Elyar Sadeghi-Hokmabadi, Mehdi Farhoudi
6. Northampton General Hospital – UNITED KINGDOM
LC: To be appointed
7. CHU St. Luc – Woluwe – BELGIUM
LC: Andre Peeters
8. Ain Shams Specialized Hospital – EGYPT
LC: Tamer Roushdy



IVT protocol Top Centres 2020

1. Hospital Sao Jose – PORTUGAL
LC: Ana Paiva Nunes
2. Valiasr - IRAN
LC: Abdoreza Ghoreishi
3. Tartu University Hospital – ESTONIA
LC: Janika Kõrv
4. North Estonia Medical Centre – ESTONIA
LC: Viiv-Marika Rand
5. Newcastle upon Tyne Hospitals NHS Foundation Trust – UNITED KINGDOM
LC: Anand Dixit, Gary Ford
6. Addenbrookes hospital – UNITED KINGDOM
LC: Liz Warburton
7. University Hospital of Heidelberg – GERMANY
LC: Peter Ringleb
8. 107th Military Hospital with Polyclinic – POLAND
LC: Marcin Rogoziewicz

TBY protocol Top Centres 2021

1. Hospital Sao Jose – PORTUGAL
LC: Ana Paiva Nunes
2. Policlinico Bari – ITALY
LC: Marco Petruzzellis
3. Hospital San Carols – SPAIN
LC: Jose Egido
4. CHU St. Luc – Woluwe – BELGIUM
LC: Andre Peeters
5. North Estonia Medical Centre – ESTONIA
LC: Viiv-Marika Rand
6. San Giovanni Bosco – ITALY
LC: Roberto Cavallo

TBY protocol Top Centres 2020

1. Hospital Sao Jose – PORTUGAL
LC: Ana Paiva Nunes
2. North Estonia Medical Centre – ESTONIA
LC: Viiv-Marika Rand
3. CHU St. Luc – Woluwe – BELGIUM
LC: Andre Peeters
4. Hospital San Carlos – SPAIN
LC: Jose Egido
5. Tartu University Hospital – ESTONIA
LC: Janika Kõrv
6. Addenbrookes hospital – UNITED KINGDOM
LC: Liz Warburton

APP protocol Top Centres 2021

1. Ain Shams Specialized Hospital – EGYPT
LC: Hossam Shokri
2. Ain Shams University Hospital – EGYPT
LC: Tamer Roushdy
3. AZ Rivierenland – BELGIUM
LC: Massimiliano Montagna
4. Policlinico Bari – ITALY
LC: Marco Petruzzellis

APP protocol Top Centres 2020

1. Hamad General Hospital – QATAR
LC: Naveed Akhtar
2. Valiasr – IRAN
LC: Abdoreza Ghoreishi
3. Ain Shams Specialized Hospital – EGYPT
LC: Hossam Shokri
4. Sri Jayewardenepura General Hospital – SRI LANKA
LC: Harsha Gunasekara
5. University hospital of Heidelberg – GERMANY
LC: Peter Ringleb
6. Newcastle upon Tyne Hospitals NHS Foundation Trust – UNITED KINGDOM
LC: Anand Dixit, Gary Ford

What is new in SITS – current and future

The number of centres and countries participating in SITS has increased further during 2021. Patient input to the registry has continued to reach all time high levels. We believe this is a strong indicator that SITS remains highly relevant for centres treating acute stroke patients worldwide.

SITS DATA ENTRY FORMS

The SITS CVT data entry form was launched in February 2022 and enables documentation of CVT risk factors, aetiology, management, and outcomes of patients. We encourage all SITS centres to use SITS CVT when appropriate.

There has been an increasing interest in a minimal version of the thrombectomy protocol as the treatment is getting established globally. In January 2021 SITS launched TBY mini: a shorter version of the standard TBY protocol with fewer variables making it less time consuming to use.

During the COVID-19 pandemic SITS received a request from users to create a COVID-19 stroke related questionnaire in the SITS Registry. The COVID-19 stroke related questionnaire was launched in June 2020.

SITS NETWORK

SITS is collaborating with the American Heart Association (AHA) / Stroke Association (ASA) regarding a new Stroke Centre Certification program through ASA and the Middle East and North Africa Stroke Organization (MENASO). SITS encourage already existing centres from the MENA region to take part of the ASA and MENASO Stroke Centre Certification Program.

In Italy, SITS is working closely with Italian centres who use SITS-QR for the ESO-Angels Award program. Together with Prof. Danilo Toni and the Italian Angels representatives we have developed new add-ons to the SITS-QR protocol. We also collaborate with our Italian colleagues on development of a mobile application to collect acute phase data.

For Latin America, SITS launched another add-on to the SITS QR protocol. The Latin American version of SITS QR has been initiated with key people in the region and will be a part of collection of data for the WSO certification program, Certificación de los Centros de ACV en Latinoamérica.

SITS is also in close collaboration with the APPNA-MERIT organization. APPNA (Association of Physicians of Pakistani Descent of North America) and MERIT (Medical Education, Research, International Training and transfer of Technology) organizes quality lectures on various topics by doctors abroad to medical students and doctors in Pakistan.

Dr. Shahid Rafiq (APPNA MERIT chair) and Dr. Danish Bhatti (APPNA MERIT co-chair) from USA, together with medical experts from Canada, UK, Middle East and Pakistan have now initiated a ground-breaking project in Pakistan focusing on medical education and quality improvement in stroke care.

SITS FUTURE

SITS continue to announce centres with top recruitment and high level of data completeness. With this we hope to stimulate recruitment and data quality in the SITS Registry.

SITS is primarily a research registry, and we wish to encourage users to engage in various research projects, at local as well as national and international level. With SITS strong online real time report tool users can download data and various reports. In addition, SITS International Coordinating Office is now also working on an improved dashboard solution to provide hospitals with a better overview of their data. We plan to launch the new and improved dashboard at ESOC 2022.

Our intention with this report is to give the reader an update on SITS patient and centre recruitment status, as well as ongoing and planned activities since the publication of the first SITS International Report in 2014. We plan to publish the next report in spring 2023. We would be delighted to receive feedback on the current issue, as well as suggestions for future report contents. Any views and ideas on all matters concerning SITS are warmly welcomed by the SITS International Coordinating Office.

SITS Publications

96. Feil K, Matusevicius M, Herzberg M, Tiedt S, Küpper C, Wischmann J, Schönecker S, Mengel A, Sartor-Pfeiffer J, Berger K, Dimitriadis K, Liebig T, Dieterich M, Mazya M, Ahmed N, Kellert L. **Minor stroke in large vessel occlusion: A matched analysis of patients from the German Stroke Registry-Endovascular Treatment (GSR-ET) and patients from the Safe Implementation of Treatments in Stroke-International StrokeThrombolysis Register (SITS-ISTR).** Eur J Neurol. 2022 Feb 4. doi: 10.1111/ene.15272. Epub ahead of print. PMID: 35122371.
95. Janssen PM, van Overhagen K, Vinklár J, Roozenbeek B, van der Worp HB, Majoie CB, Bar M, Černík D, Herzig R, Jurák L, Ostrý S, Mikulík R, Lingsma HF, Dippel WJ; **MR CLEAN Registry investigators and the SITS TBY Registry investigators from the Czech Republic. Between-Center Variation in Outcome After Endovascular Treatment of Acute Stroke: Analysis of Two Nationwide Registries.** Circ Cardiovasc Qual Outcomes. 2022 Mar;15(3):e008180. doi: 10.1161/CIRCOUTCOMES.121.008180. Epub 2022 Jan 31. PMID: 35094522; PMCID: PMC8920023.
94. Aref H, Zakaria M, Shokri H, Roushdy T, El Basiouny A, El Nahas N. **Changing the landscape of stroke in Egypt.** Cerebrovasc Dis Extra. 2021 Dec 3. doi: 10.1159/000521271. Online ahead of print. PMID: 34864736. [PubMed]
93. El Nahas NM, Shokri HM, Roushdy TM, Dawood NL, Abushady EM, Georgy SS, Zaki AS, Bedros RV, Aref HM. **Door to Needle Count Down: A 3 Years Experience in an Egyptian University Stroke Center.** Neurologist. 2021 Nov 30. doi: 10.1097/NRL.0000000000000372. Online ahead of print. PMID: 34855665. [PubMed]
92. Sadeghi-Hokmabadi E, Ghoreishi A, Rikhtegar R, Sariaslani P, Rafie S, Vakilian A, Sharifipour E, Mehrpour M, Saadatnia M, Mirza-Aghazadeh-Attari M, Farhoudi M. **Low-dose versus standard-dose alteplase for intravenous thrombolysis in patients with acute ischemic stroke in Iran: Results from the safe implementation of treatments in stroke registry.** Curr J Neurol. 2021 Oct 7. doi: http://dx.doi.org/10.18502/cjn.v20i4.8346. [Current Journal of Neurology]
91. Matusevicius M, Cooray C, Rand VM, Nunes AP, Moreira T, Tassi R, Egido JA, Ollikainen JP, Bigliardi G, Holmin S, Ahmed N. **Stroke Etiology and Outcomes after Endovascular Thrombectomy: Results from the SITS Registry and a Meta-Analysis.** J Stroke. 2021 Sep;23(3):388-400. doi: 10.5853/jos.2021.00850. Epub 2021 Sep 30. PMID: 34649383. [PubMed]
90. Ahmed N, Mazya M, Nunes AP, Moreira T, Ollikainen JP, Escudero-Martinez I, Bigliardi G, Dorado L, Dávalos A, Egido JA, Tassi R, Strbian D, Zini A, Nichelli P, Herzig R, Jurák L, Hurtikova E, Tsvigoulis G, Peeters A, Nevšimalová M, Brozman M, Cavallo R, Lees KR, Mikulík R, Toni D, Holmin S. **Safety and Outcomes of Thrombectomy in Ischemic Stroke With vs Without Intravenous Thrombolysis.** Neurology. 2021 Jun 4;10.1212/WNL.00000000000012327. doi: 10.1212/WNL.00000000000012327. Epub ahead of print. PMID: 34088873. [PubMed]
89. Ahmed N, Mazya M, Nunes AP, Moreira T, Ollikainen JP, Escudero-Martinez I, Bigliardi G, Dorado L, Dávalos A, Egido JA, Tassi R, Strbian D, Zini A, Nichelli P, Herzig R, Jurák L, Hurtikova E, Tsvigoulis G, Peeters A, Nevšimalová M, Brozman M, Cavallo R, Lees KR, Mikulík R, Toni D, Holmin S. **Safety and outcomes of routine endovascular thrombectomy in large artery occlusion recorded in the SITS Register: An observational study.** J Intern Med. 2021 May 17. doi: 10.1111/joim.13302. Epub ahead of print. PMID: 33999451. [PubMed]

88. Anadani M, Matusevicius M, Tsivgoulis G, Peeters A, Nunes AP, Mancuso M, Roffe C, de Havenon A, Ahmed N. **Magnitude of blood pressure change and clinical outcomes after thrombectomy in stroke caused by large artery occlusion.** Eur J Neurol. 2021 Jun;28(6):1922-1930. doi: 10.1111/ene.14807. Epub 2021 Mar 19. PMID: 33682232. [PubMed]
87. Ahmed N, Lees KR, von Kummer R, Holmin S, Escudero-Martinez I, Bottai M, Jansen O, Wahlgren N; Collaborators. **The SITS Open Study: A Prospective, Open Label Blinded Evaluation Study of Thrombectomy in Clinical Practice.** Stroke. 2021 Mar;52(3):792-801. doi: 10.1161/STROKEAHA.120.031031. Epub 2021 Feb 10. PMID: 33563015. [PubMed]
86. Tsivgoulis G, Katsanos AH, Ahmed N. Ann Neurol. **Reply to "Prior Dual Antiplatelet Therapy and Thrombolysis in Acute Stroke"**. 2020 Oct;88(4):859-860. doi: 10.1002/ana.25851. Epub 2020 Aug 5. PMID: 32683728 [PubMed]
85. Cooray C, Karlinski M, Kobayashi A, Ringleb P, Körv J, Macleod MJ, Dixit A, Azevedo E, Bladin C, Ahmed N. **Safety and early outcomes after intravenous thrombolysis in acute ischemic stroke patients with prestroke disability.** Int J Stroke. 2020 Sep 2:1747493020954605. doi: 10.1177/1747493020954605. Online ahead of print. PMID: 32878588 [PubMed]
84. Hossam M. Shokri, Nevine M. El Nahas, Hany M. Aref, Noha L. Dawood, Eman M. Abushady, Eman H. Abd Eldayem, Shady S. Georgy, Amr S. Zaki, Rady Y. Bedros, Mona M. Wahid El Din, Tamer M. Roushdy. **Factors related to time of stroke onset versus time of hospital arrival: A SITS registry-based study in an Egyptian stroke center.** Plos One 2020 Sep 11;15(9):e0238305. doi: 10.1371/journal.pone.0238305. eCollection 2020 [PubMed]
83. Yu WM, Abdul-Rahim AH, Cameron AC, Körv J, Sevcik P, Toni D, Lees KR and SITS Scientific Committee. **The Incidence and Associated Factors of Early Neurological Deterioration After Thrombolysis, Results From SITS Registry.** Stroke. 2020 Aug 19:STROKEAHA119028287. doi: 10.1161/STROKEAHA.119.028287 AHA Journals
82. Irene Escudero-Martínez, Michael V. Mazya, Christine Teutsch, Norbert Lesko, Zuzana Gdovinova, Leonardo Barbarini, Waldemar Fryze, Michal Karlinski, Adam Kobayashi, Georgi Krastev, Ana Paiva Nunes, Katarina Pasztoova, Andre Peeters MD, Piotr Sobolewski, Aleksandras Vilionskis, Danilo Toni, Niaz Ahmed MD; on behalf of the SITS Investigators. **Dabigatran initiation in patients with non-valvular AF and first acute ischemic stroke: a retrospective observational study from the SITS registry.** BMJ Open 2020;10:e037234. doi: 10.1136/bmjopen-2020-037234
81. Keselman B, Gdovinová Z, Jatuzis D, Melo TPE, Vilionskis A, Cavallo R, Frol S, Jurak L, Koyuncu B, Nunes AP, Petrone A, Lees KR, Mazya MV, **Safety and Outcomes of Intravenous Thrombolysis in Posterior Versus Anterior Circulation Stroke: Results From the Safe Implementation of Treatments in Stroke Registry and Meta-Analysis.** Stroke. 2020 Mar;51(3):876-882. doi:10.1161/STROKEAHA.119.027071. Epub 2020 Jan 9 [PubMed]
80. Alhazzani A, Al-Rukn S, Khan M, Moreira T, Wahlgren N. **Changing the face of stroke care in the Middle East North Africa region.** Stroke. 2020 February, Journal of the Neurological Sciences vol. 412, doi:10.1016/j.jns.2020.116727 [Epub ahead of print] [ScienceDirect]

79. Thorén M, Dixit A, Escudero-Martinez I, Gdovinová Z, Klecka L, Rand VM, Toni D, Vilionskis A, Wahlgren N, Ahmed N. **Effect of Recanalization on Cerebral Edema in Ischemic Stroke Treated With Thrombolysis and/or Endovascular Therapy.** *Stroke*. 2020 Jan;51(1):216-223. doi: 10.1161/STROKEAHA.119.026692 [PubMed]
78. Matusevicius M, Cooray C, Bottai M, Mazya M, Tsivgoulis G, Nunes AP, Moreira T, Ollikainen J, Tassi R, Strbian D, Toni D, Holmin S, Ahmed N. **Blood Pressure After Endovascular Thrombectomy: Modeling for Outcomes Based on Recanalization Status.** *Stroke*. 2019 Dec 11;STROKEAHA119026914. doi:10.1161/STROKEAHA.119.026914. [Epub ahead of print] [PubMed]
77. Al-Rukn S, Mazya M, Akhtar N, Hashim H, Mansouri B, Faouzi B, Aref H, Abdulrahman H, Kesraoui S, Hentati F, Gebelly S, Ahmed N, Wahlgren N, Abd-Allah F, Almekhlafi M, Moreira T. **Stroke in the Middle-East and North Africa: A 2-year prospective observational study of intravenous thrombolysis treatment in the region. Results from the SITS-MENA Registry.** *Int J Stroke*. 2019 Oct 8;1747493019874729. doi: 10.1177/1747493019874729. [Epub ahead of print] [PubMed]
76. Charith Cooray, Michael Mazya, Robert Mikulik, Jurak Lubomir, Miroslav Brozman, Peter Ringleb, Anand Dixit, Danilo Toni, Niaz Ahmed. **Safety and outcome of intravenous thrombolysis in acute ischaemic stroke patients on prophylactic doses of low-molecular-weight heparins at stroke onset.** *Stroke* 2019 May;50(5):1149-1155. doi: 10.1161/STROKEAHA.118.024575. [PubMed]
75. Charith Cooray, Michael Mazya, Robert Mikulik, Jurak Lubomir, Miroslav Brozman, Peter Ringleb, Anand Dixit, Danilo Toni, Niaz Ahmed. **Safety and outcome of intravenous thrombolysis in acute ischaemic stroke patients on prophylactic doses of low-molecular-weight heparins at stroke onset.** *Stroke*. Accepted for publication 7 March 2019
74. Keselman B, Cooray C, Vanhooren G, Bassi P, Consoli D, Nichelli P, Peeters A, Sanak D, Zini A, Wahlgren N, Ahmed N, Mazya MV. IV thrombolysis in stroke mimics - **Results from the SITS International Stroke Thrombolysis Register (SITS-ISTR).** *European Journal of Neurology*. Accepted for publication, 2019-02-19.
73. Marius Matusevicius, Maurizio Paciaroni, Valeria Caso, Matteo Bottai, Dheeraj Khurana, Mario de Bastos, Sheila Cristina Ouriques Martins, Yakup Krespi, Charith Cooray, Danilo Toni, Niaz Ahmed. **Outcome after intravenous thrombolysis in patients with acute lacunar stroke, an observational study based on SITS international registry** *Int J Stroke*. 2019 Dec;14(9):878-886. doi: 10.1177/1747493019840947.
72. Rukn SA, Mazya MV, Hentati F, Sassi SB, Nabli F, Said Z, Faouzi B, Hashim H, Abd-Allah F, Mansouri B, Kesraoui S, Gebeily S, Abdulrahman H, Akhtar N, Ahmed N, Wahlgren N, Aref H, Almekhlafi M, Moreira T. **Stroke in the Middle-East and North Africa: A 2-year prospective observational study of stroke characteristics in the region-Results from the Safe Implementation of Treatments in Stroke (SITS)-Middle-East and North African (MENA).** *Int J Stroke*. 2019 Oct;14(7):715-722. doi: 10.1177/1747493019830331. Epub 2019 Mar 12. PubMed PMID: 30860454.
71. Cooray C, Mazya MV, Bottai M, Scheitz JF, Abdul-Rahim AH, Moreira TP, Mikulik R, Krajina A, Nevsimalova M, Toni D, Wahlgren N, Ahmed N. **Are you suffering from a large arterial occlusion? Please raise your arm!** *Stroke Vasc Neurol*. 2018 Sep 3;3(4):215-221. doi: 10.1136/svn-2018-000165. eCollection 2018 Dec.

70. Tsivgoulis G, Katsanos AH, Mavridis D, Gdovinova Z, Karliński M, Macleod MJ, Strbian D, Ahmed N. **Intravenous Thrombolysis for Ischemic Stroke Patients on Dual Antiplatelets.** *Ann Neurol.* 2018 Jul;84(1):89-97. doi: 10.1002/ana.25269. Epub 2018 Jul 30. PubMed PMID: 30048012.
69. Tsivgoulis G, Geisler F, Katsanos AH, Kőrv J, Kunz A, Mikulik R, Rozanski M, Wendt M, Audebert HJ. **Ultraearly Intravenous Thrombolysis for Acute Ischemic Stroke in Mobile Stroke Unit and Hospital Settings: A Comparative Analysis.** *Stroke.* 2018 Jul 9. pii: STROKEAHA.118.021536. doi: 10.1161/STROKEAHA.118.021536. [Epub ahead of print] PubMed PMID: 29986934
68. Tsivgoulis G, Kargiotis O, Rudolf J, Komnos A, Tavernarakis A, Karapanayiotides T, Ellul J, Katsanos AH, Giannopoulos S, Gryllia M, Safouris A, Papamichalis P, Vadikolias K, Mitsias P, Hadjigeorgiou G. **Intravenous thrombolysis for acute ischemic stroke in Greece: the Safe Implementation of Thrombolysis in Stroke registry 15-year experience.** *Ther Adv Neurol Disord.* 2018 Jun 28;11:1756286418783578. doi: 10.1177/1756286418783578. eCollection 2018. PubMed PMID: 30034535; PubMed Central PMCID: PMC604860
67. Mazya MV, Ahmed N, Azevedo E, Davalos A, Dorado L, Karlinski M, Lorenzano S, Neumann J, Toni D, Moreira TP; SITS Investigators. **Impact of Transcranial Doppler Ultrasound on Logistics and Outcomes in Stroke Thrombolysis: Results From the SITS-ISTR.** *Stroke.* 2018 Jul;49(7):1695-1700. doi: 10.1161/STROKEAHA.118.021485. Epub 2018 May 29. PMID: 29844031
66. Vaclavik D, Vilionskis A, Jatuzis D, Karlinski MA, Gdovinova Z, Kőrv J, Tsivgoulis G, Mikulik R. **Clinical outcome of cardioembolic stroke treated by intravenous thrombolysis.** *Acta Neurol Scand.* 2018 Mar;137(3):347-355.
65. Cappellari M, Turcato G, Forlivesi S, Zivelonghi C, Bovi P, Bonetti B, Toni D. **TARTING-SICH Nomogram to Predict Symptomatic Intracerebral Hemorrhage After Intravenous Thrombolysis for Stroke.** *Stroke.* 2018 Feb;49(2):397-404.
64. Mundiyanapurath S, Hees K, Ahmed N, Wahlgren N, Uhlmann L, Kieser M, Ringleb PA, Hacke W, Nagel S. **Predictors of symptomatic intracranial haemorrhage in off-label thrombolysis: an analysis of the Safe Implementation of Treatments in Stroke registry.** *Eur J Neurol.* 2018 Feb;25(2):340-e11.
63. Volny O, Krajina A, Belaskova S, Bar M, Cimflova P, Herzig R, Sanak D, Tomek A, Köcher M, Rocek M, Padr R, Cihlar F, Nevsimalova M, Jurak L, Havlicek R, Kovar M, Sevcik P, Rohan V, Fiksa J, Menon BK, Mikulik R. **Mechanical thrombectomy performs similarly in real world practice: a 2016 nationwide study from the Czech Republic.** *J Neurointerv Surg.* 2018 Aug;10(8):741-745.
62. Ahmed N, Lees KR, Ringleb PA, Bladin C, Collas D, Toni D, Ford GA; The SITS Investigators. **Outcome after stroke thrombolysis in patients >80 years treated within 3 hours vs >3-4.5 hours.** *Neurology.* 2017 Oct 10;89(15):1561-1568.
61. Thorén M, Azevedo E, Dawson J, Egido JA, Falcou A, Ford GA, Holmin S, Mikulik R, Ollikainen J, Wahlgren N, Ahmed N. **Predictors for Cerebral Edema in Acute Ischemic Stroke Treated With Intravenous Thrombolysis.** *Stroke.* 2017 Sep;48(9):2464-2471.
60. Kellert L, Hametner C, Ahmed N, Rauch G, MacLeod MJ, Perini F, Lees KR, Ringleb PA; SITS Investigators. **Reciprocal Interaction of 24-Hour Blood Pressure Variability and Systolic Blood Pressure on Outcome in Stroke Thrombolysis.** *Stroke.* 2017 Jul;48(7):1827-1834.

59. Tsivgoulis G, Katsanos AH, Kadlecová P, Czlonkowska A, Kobayashi A, Brozman M, Švigelj V, Csiba L, Fekete K, Kőrv J, Demarin V, Vilionskis A, Jatuzis D, Krespi Y, Liantinioti C, Giannopoulos S, Mikulik R. **Intravenous thrombolysis for ischemic stroke in the golden hour: propensity-matched analysis from the SITS-EAST registry.** J Neurol. 2017 May;264(5):912-920.
58. Dorado L, Ahmed N, Thomalla G, Lozano M, Malojcic B, Wani M, Millán M, Tomek A, Dávalos A. **Intravenous Thrombolysis in Unknown-Onset Stroke: Results From the Safe Implementation of Treatment in Stroke-International Stroke Thrombolysis Registry.** Stroke. 2017 Mar;48(3):720-725.
57. Anani N, Mazya MV, Chen R, Prazeres Moreira T, Bill O, Ahmed N, Wahlgren N, Koch S. **Applying openEHR's Guideline Definition Language to the SITS international stroke treatment registry: a European retrospective observational study.** BMC Med Inform Decis Mak. 2017 Jan 10;17(1):7.
56. Scheitz JF, Abdul-Rahim AH, MacIsaac RL, Cooray C, Sucharew H, Kleindorfer D, Khatri, P, Broderick JP, Audebert HJ, Ahmed N, Wahlgren N, Endres M, Nolte CH, Lees KR. **Clinical selection strategies to identify stroke patients with large anterior vessel occlusion-Results from SITS-ISTR.** (Stroke, In press December 2016)
55. Cooray C, Mazya M, Bottai M, Dorado L, Skoda O, Toni D, Ford GA, Wahlgren N, Ahmed N. **External Validation of the ASTRAL and DRAGON Scores for Prediction of Functional Outcome in Stroke.** Stroke. 2016 Jun;47(6):1493-9.
54. Ahmed N, Hermansson K, Bluhmki E, Danays T, Nunes AP, Kenton A, Lakshmanan S, Toni D, Mikulik R, Ford GA, Lees KR and Wahlgren N. **The SITS-UTMOST: A registry-based prospective study in Europe investigating the impact of regulatory approval of intravenous Actilyse in the extended time window (3–4.5 h) in acute ischaemic stroke.** European Stroke Journal, first published on July 29, 2016 doi:10.1177/2396987316661890
53. Lundström E, Zini A, Wahlgren N, Ahmed N. **How common is isolated dysphasia among patients with stroke treated with intravenous thrombolysis, and what is their outcome? Results from the SITS-ISTR.** BMJ Open. 2015 Nov25;5(11):e009109. doi: 10.1136/bmjopen 2015-009109. PMID: 26608637
52. Anani N, Mazya MV, Bill O, Chen R, Koch S, Ahmed N, Wahlgren N, Prazeres Moreira T. **Changes in European Label and Guideline Adherence After Updated Recommendations for Stroke Thrombolysis: Results From the Safe Implementation of Treatments in Stroke Registry.** Circ Cardiovasc Qual Outcomes. 2015 Oct;8(6 Suppl 3):S155-62. doi: 10.1161/CIRCOUTCOMES.115.002097. PMID: 26515204
51. Mazya MV, Lees KR, Collas D, Rand VM, Mikulik R, Toni D, Wahlgren N, Ahmed N. **IIV thrombolysis in very severe and severe ischemic stroke: Results from the SITS-ISTR Registry.** Neurology. 2015 Nov 6. pii: 10.1212/WNL.0000000000002199.
50. Karlinski M, Kobayashi A, Czlonkowska A, Mikulik R, Vaclavik D, Brozman M, Gdovinova Z, Švigelj V, Csiba L, Fekete K, Kőrv J, Demarin V, Bašić-Kes V, Vilionskis A, Jatuzis D, Krespi Y, Shamalov N, Andonova S, Ahmed N, Wahlgren N; **Safe Implementation of Treatments in Stroke-East Registry (SITS-EAST) Investigators. Intravenous Thrombolysis for Stroke Recurring Within 3 Months From the Previous Event.** Stroke. 2015 Oct 8. pii: STROKEAHA.115.010420.

49. Abdul-Rahim AH, Fulton RL, Sucharew H, Kleindorfer D, Khatri P, Broderick JP, Lees KR; SITS-MOST Steering Committee. **National Institutes of Health Stroke Scale Item Profiles as Predictor of Patient Outcome: External Validation on Safe Implementation of Thrombolysis in Stroke-Monitoring Study Data.** *Stroke*. 2015 Oct;46(10):2779-85. doi: 10.1161/STROKEAHA.115.010380.
48. Tsivgoulis G, Kadlecová P, Kobayashi A, Czlonkowska A, Brozman M, Švigelj V, Csiba L, Kőrv J, Demarin V, Vilionskis A, Jatuzis D, Katsanos AH, Rudolf J, Krespi Y, Mikulik R. **Safety of Statin Pretreatment in Intravenous Thrombolysis for Acute Ischemic Stroke.** *Stroke*. 2015 Sep;46(9):2681-4. doi: 10.1161/STROKEAHA.115.010244..
47. Flint AC, Rao VA, Chan SL, Cullen SP, Faigles BS, Smith WS, Bath PM, Wahlgren N, Ahmed N, Donnan GA, Johnston SC; **SITS International and VISTA-plus investigators.** **Improved ischemic stroke outcome prediction using model estimation of outcome probability: the THRIVE-c calculation.** *Int J Stroke*. 2015 Aug;10(6):815-21. doi: 10.1111/ijss.12529.
46. Cooray C, Fekete K, Mikulik R, Lees KR, Wahlgren N, Ahmed N. **Threshold for NIH stroke scale in predicting vessel occlusion and functional outcome after stroke thrombolysis.** *Int J Stroke*. 2015 Aug;10(6):822-9. doi: 10.1111/ijss.12451.
45. Strbian D, Ahmed N, Wahlgren N, Lees KR, Toni D, Roffe C, Surakka IL, Tatlisumak T; SITS Investigators. **Trends in Door-to-Thrombolysis Time in the Safe Implementation of Stroke Thrombolysis Registry: Effect of Center Volume and Duration of Registry Membership.** *Stroke*. 2015 May;46(5):1275-80. doi: 10.1161/STROKEA-HA.114.007170.
44. Novotná J, Kadlecová P, Czlonkowska A, Brozman M, Švigelj V, Csiba L, Kőrv J, Demarin V, Vilionskis A, Mikulik R; SITS-EAST Investigators. **Hyperdense cerebral artery computed tomography sign is associated with stroke severity rather than stroke subtype.** *J Stroke Cerebrovasc Dis*. 2014 Nov-Dec;23(10):2533-9. doi:10.1016/j.jstrokecerebrovasdis.2014.04.034.
43. Haršány M, Kadlecová P, Švigelj V, Kőrv J, Kes VB, Vilionskis A, Krespi Y, Mikulik R; SITS-EAST Investigators. **Factors influencing door-to-imaging time: analysis of the safe implementation of treatments in Stroke-EAST registry.** *J Stroke Cerebrovasc Dis*. 2014 Sep;23(8):2122-9. doi: 10.1016/j.jstrokecerebrovasdis.2014.03.019.
42. Flint AC, Gupta R, Smith WS, Kamel H, Faigles BS, Cullen SP, Rao VA, Bath PM, Wahlgren N, Ahmed N, Donnan GA; SITS International and VISTA-plus investigators. **The THRIVE score predicts symptomatic intracerebral hemorrhage after intravenous tPA administration in SITS-MOST.** *Int J Stroke*. 2014 Aug;9(6):705-10. doi: 10.1111/ijss.12335.
41. Mazya MV, Ahmed N, Ford GA, Hobohm C, Mikulik R, Nunes AP, Wahlgren N; **Remote or extracerebral intracerebral hemorrhage-an uncommon complication of stroke thrombolysis: results from the Safe Implementation of Treatments in Stroke-International stroke thrombolysis register.** *Stroke*. 2014 Jun;45(6):1657--63. doi: 10.1161/STROKEAHA.114.004923.
40. Karlinski M, Kobayashi A, Czlonkowska A, Mikulik R, Vaclavik D, Brozman M, Szigelj V, Csiba L, Fekete K, Kőrv J, Demarin V, Vilionskis A, Jatuzis D, Krespi Y, Ahmed N, Wahlgren N; **Safe Implementation of Treatments in Stroke-Eastern Europe (SITS-EAST) Investigators.** **Role of preexisting disability in patients treated with intravenous thrombolysis for ischemic stroke.** *Stroke*. 2014 Feb 4.

39. Lorenzano S, Ahmed N, Tatlisumak T, Gomis M, Dávalos A, Mikulík R, Sevcik P, Ollikainen J, Wahlgren N, Toni D; SITS Investigators **Within-day and weekly variations of thrombolysis in acute Ischemic stroke: results from Safe Implementation of Treatments in Stroke-International stroke thrombolysis register.** Stroke 2014 Jan;45(1):176-84. doi: 10.1161/STROKEAHA.113.002133.
38. Lorenzano S, Ahmed N, Falcou A, Mikulík R, Tatlisumak T, Roffe C, Wahlgren N, Toni D; SITS Investigators. **Does sex influence the response to Intravenous Thrombolysis in ischemic stroke? : Answers from Safe Implementation of Treatments in Stroke-International Stroke Thrombolysis Register.** Stroke. 2013 Dec;44(12):3401-6. doi: 10.1161/STROKEAHA.113.002908.
37. Kőrv J, Vibo R, Kadlecová P, Kobayashi A, Czlonkowska A, Brozman M, Szigelj V, Csiba L, Fekete K, Demarin V, Vilionskis A, Jatuzis D, Krespi Y, Ahmed N, Mikulík R; for the Safe Implementation of Treatments in Stroke – East (SITS-EAST) Registry Investigators. **Benefit of thrombolysis for stroke is maintained around the clock: results from the SITS-EAST Registry** Eur J Neurol. 2013 Sep 16. doi: 10.1111/ene.12257.
36. Kharitonova TV, Castillo J, Wahlgren N; SITS investigators. **Importance of cerebral artery recanalization in patients with stroke with and without neurological improvement after Intravenous Thrombolysis** Stroke 2013 Sep;44(9):2513-8. doi: 10.1161/STROKEAHA.111.000048.
35. Mazya MV, Lees KR, Markus R, Roine RO, Seet RC, Wahlgren N, Ahmed N; for the SITS investigators. **Safety of IV thrombolysis for ischemic stroke in patients treated with Warfarin.** Ann Neurol. 2013 Jun 6. doi: 10.1002/ana.23924.
34. Ahmed N, Kellert L, Lees KR, Mikulík R, Tatlisumak T, Toni D; for the SITS Investigators. **Results of Intravenous Thrombolysis Within 4.5 to 6 Hours and Updated Results Within 3 to 4.5 Hours of Onset of Acute Ischemic Stroke Recorded in the Safe Implementation of Treatment in Stroke International Stroke Thrombolysis Register (SITS-ISTR): An Observational Study.** JAMA Neurol. 2013 May 20;1-8. doi: 10.1001/jamaneurol.2013.406.
33. Mazya MV, Bovi P, Castillo J, Jatuzis D, Kobayashi A, Wahlgren N, Ahmed N; **External Validation of the SEDAN Score for Prediction of Intracerebral Hemorrhage in Stroke Thrombolysis.** Stroke 2013 Jun;44(6):1595-600. doi: 10.1161/STROKEAHA.113.000794. Epub 2013 Apr 30. PMID: 23632975
32. Cappellari M, Bovi P, Moretto G, Zini A, Nencini P, Sessa M, Furlan M, Pezzini A, Orlandi G, Paciaroni M, Tassinari T, Procaccianti G, Di Lazzaro V, Bettoni L, Gandolfo C, Silvestrelli G, Rasura M, Martini G, Melis M, Calloni MV, Chiodo-Grandi F, Beretta S, Guarino M, Altavista MC, Marcheselli S, Galletti G, Adobbati L, Del Sette M, Mancini A, Orrico D, Monaco S, Cavallini A, Sciolla R, Federico F, Scoditti U, Brusafferri F, Grassa C, Specchio L, Bongioanni MR, Sparaco M, Zampolini M, Greco G, Colombo R, Passarella B, Adami A, Consoli D, Toni D. **The THRombolysis and STatins (THRaST) study.** Neurology. 2013 Feb 12;80(7):655-61.
31. Rha JH, Shrivastava VP, Wang Y, Lee KE, Ahmed N, Bluhmki E, Hermansson K, Wahlgren N; for the SITS investigators. **Thrombolysis for acute ischemic stroke with alteplase in an Asian population: results of the multicenter, multinational, Safe Implementation of Thrombolysis in Stroke-Non European Union World (SITS-NEW).** In J Stroke 2012, Epub 2012 Sep 18

30. Strbian D, Ahmed N, Wahlgren N, Kaste M, Tatlisumak T; for SITS investigators. **Intravenous thrombolysis in ischemic stroke patients with isolated homonymous hemianopia: analysis of Safe Implementation of Thrombolysis in Stroke - International Stroke Thrombolysis Register (SITS-ISTR).** *Stroke* 2012; 43: 2695-2698, Epub 2012 Jul 17
29. Mazya M, Egido J, Ford G, Lees K, Mikulík R, Toni D, Wahlgren N, Ahmed N; For the SITS investigators. **Predicting the Risk of Symptomatic Intracerebral Hemorrhage in Ischemic Stroke Treated With Intravenous Alteplase: Safe Implementation of Treatments in Stroke (SITS) Symptomatic Intracerebral Hemorrhage Risk Score.** *Stroke* 2012; 43:1524-1531, Epub 2012 March 22
28. Mikulík R, Kadlecová P, Czlonkowska A, Kobayashi A, Brozman M, Svigelj V, Csiba L, Fekete K, Kőrv J, Demarin V, Vilionskis A, Jatuzis D, Krespi Y, Ahmed N; for the Safe Implementation of Treatments in Stroke-East Registry (SITS-EAST) Investigators. **Factors Influencing In-Hospital Delay in Treatment With Intravenous Thrombolysis.** *Stroke*. 2012 Mar 15 [Epub ahead of print]
27. Karlinski M, Kobayashi A, Mikulík R, Sanak D, Wahlgren N, Czlonkowska A. **Intravenous alteplase in ischemic stroke patients not fully adhering to the current drug license in Central and Eastern Europe.** *Int J Stroke*. 2012 Feb 7.
26. Toni D, Ahmed N, Anzini A, Lorenzano S, Brozman M, Kaste M, Mikulík R, Putaala J, Wahlgren N; For the SITS investigators. **Intravenous thrombolysis in young stroke patients: Results from the SITS-ISTR.** *Neurology*. 2012 Mar 7.
25. Mishra NK, Ahmed N, Davalos A, Iversen HK, Melo T, Soinne L, Wahlgren N, Lees KR; SITS and VISTA collaborators. **Thrombolysis outcomes in acute ischemic stroke patients with prior stroke and diabetes mellitus.** *Neurology*. 2011 Nov 22;77(21):1866-72. Epub 2011 Nov 16. PMID: 22094479
24. Zinkstok SM, Vergouwen MD, Engelter ST, Lyrer PA, Bonati LH, Arnold M, Mattle HP, Fischer U, Sarikaya H, Baumgartner RW, Georgiadis D, Odier C, Michel P, Putaala J, Griebbe M, Wahlgren N, Ahmed N, van Geloven N, de Haan RJ, Nederkoorn PJ. **Safety and functional outcome of thrombolysis in dissection-related ischemic stroke: a meta-analysis of individual patient data.** *Stroke* 2011 Sep;42(9):2515-20. Epub 2011 Jul 28. Review.
23. Kharitonova T, Mikulík R, Roine RO, Soinne L, Ahmed N, Wahlgren N; for the Safe Implementation of Thrombolysis in Stroke (SITS) Investigators. **Association of Early National Institutes of Health Stroke Scale Improvement With Vessel Recanalisation and Functional Outcome After Intravenous Thrombolysis in Ischemic Stroke.** *Stroke* 2011 Jun;42(6):1638-43. Epub 2011 Apr 21
22. Diedler J, Ahmed N, Glahn J, Grond M, Lorenzano S, Brozman M, Sykora M, Ringleb P; **Is the Maximum Dose of 90 mg Alteplase Sufficient for Patients With Ischemic Stroke Weighing > 100 kg?** *Stroke* 2011 Jun;42(6):1615-20. Epub 2011 Apr
21. Topakian R, Brainin M, Eckhardt R, Kiechl S, Ahmed N, Ferrari J, Iglseder B, Wahlgren NG, Lang W, Fazekas F, Willeit J, Aichner FT; for the SITS-Austria group. **Thrombolytic therapy for acute stroke in Austria: data from the Safe Implementation of Thrombolysis in Stroke (SITS) register.** *Eur J Neurol*. 2011 Feb;18(2):306-11.

20. Mishra, NK, Ahmed N, Andersen G, Egido J, Lindsberg P, Ringleb PA, Wahlgren N, Lees KR; for the VISTA and SITS collaborators. **Thrombolysis in the very elderly: controlled comparison of SITS International Stroke Thrombolysis Registry and Virtual International Stroke Trials Archive.** BMJ. 2010 Nov 23;341:c6046.
19. Ford GA, Ahmed N, Azevedo E, Grond M, Larrue V, Lindsberg P, Toni D, Wahlgren N. **Intravenous alteplase for stroke in those older than 80 years old.** Stroke 2010 Nov;41(11):2568-74. Epub 2010 Oct 7
18. Ahmed N, Wahlgren N, Grond M, Hennerici M, Lees KR, Mikulík R, Parsons M, Roine RO, Toni D, Ringleb P; for the SITS Investigators. **Implementation and outcome of thrombolysis with alteplase 3-4.5 h after an acute stroke: an updated analysis from SITS-ISTR.** Lancet Neurol 2010; 9: 866-74
17. Ahmed N, Dávalos A, Eriksson N, Ford GA, Glahn J, Hennerici M, Mikulík R, Kaste M, Lees KR, Lindsberg P, Toni D; for the SITS Investigators. **Association of admission blood glucose and outcome in patients treated with intravenous thrombolysis** Arch Neurol 2011; 67(9): 1123-1130.
16. Diedler J, Ahmed N, Sykora M, Uyttenboogaart M, Overgaard K, Luijckx G-J, Soinne L, Ford GA, Lees KR, Wahlgren N, Ringleb P; **Safety of intravenous thrombolysis for acute ischemic stroke in patients receiving antiplatelet therapy at stroke onset.** Stroke 2010 Feb;41(2):288-94. Epub 2010 Jan 7.
15. Simpson MA, Dewey HM, Churilov L, Ahmed N, Bladin CF, Schultz D, Mrkus R, Stur JW, Levi CR, Blacker DJ, Jannes J, Lindley RI, Parsons MW; **Thrombolysis for acute stroke in Australia: outcomes from the Safe Implementation of Thrombolysis in Stroke registry (2002-2008).** Med J Aust 2010 Oct 18;193(8):439-43.
14. Vanacker P, Thijs V, Peeters A, Bruneel B, Laloux P, Druwé P, De Deyn P, Ahmed N, Wahlgren N, Vanhooren G; Belgian SITS-collaboration group. **The Belgian experience with intravenous thrombolysis for acute ischemic stroke.** Acta Neurol Belg. 2010 Jun;110(2):157-62.
13. Wahlgren N; **Systemic thrombolysis in clinical practice: what have we learned after the Safe Implementation of Thrombolysis in Stroke Monitoring Study?** Cerebrovasc Dis. 2009;27 Suppl 1:168-76. Epub 2009 Apr 3. Review.
12. Kharitonova T, Ahmed N, Thoren M, et al. **Hyperdense middle cerebral artery sign on admission CT scan - prognostic significance for ischaemic stroke patients treated with intravenous thrombolysis in the safe implementation of thrombolysis in Stroke.** Cerebrovasc Dis. 2009;27(1):51-9.
11. Mikulík R, Václavík D, Sanák D, Bar M, Sevcík P, Kalita Z, Wahlgren N; **A nationwide study on topography and efficacy of the stroke treatment network in the Czech Republic.** J Neurol. 2010 Jan;257(1):31-7. Epub 2009 Jul 23.
10. Kharitonova T, Thorén M, Ahmed N, Wardlaw JM, von Kummer R, Thomassen L, Wahlgren N; for the SITS investigators. **Disappearing Hyperdense Middle Cerebral Artery Sign in ischemic stroke patients treated.** J Neurol Neurosurg Psychiatry. 2009 Mar;80(3):248. Epub 2008 Oct 17.
9. Kobayashi A, Czlonkowska A, Ahmed N, Romanowicz S, Glonek M, Nyka WM, Opala G, Wahlgren N; for the SITS Poland Collaborative Group. **Intravenous recombinant tissue plasminogen activator for acute stroke in Poland: an analysis based on the Safe Implementation of Thrombolysis in Stroke (SITS) Registry.** Acta Neurol Scand. 2010 Oct;122(4):229-36.

8. Roje-Bedeković M, Vargek-Solter V, Corić L, Sabolek K, Breitenfeld T, Supanc V, Demarin V; **Thrombolysis for acute ischemic stroke-our experiences as part of SITS-MOST.** Acta Clin Croat. 2009 Sep;48(3):287-93.
7. Ahmed N, Wahlgren N, Brainin M, et al. **Relationship of blood pressure, antihypertensive therapy, and outcome in ischemic stroke treated with intravenous thrombolysis: retrospective analysis from Safe Implementation of Thrombolysis in Stroke - International Stroke Thrombolysis Register (SITS-ISTR).** Stroke 2009 Jul;40(7):2442-9. Epub 2009 May 21.
6. Rodríguez-Yáñez M, Alvarez-Sabín J, Dávalos A, Díez-Tejedor E, Castillo J; **Thrombolytic therapy for acute ischemic stroke. Experience of SITS (Safe Implementation of Thrombolysis in Stroke) register.** Neurologia. 2009 Jun;24(5):288-91. Spanish.*
5. Lorenzano S, Ahmed N, Rosselli A, Marcello N, Inzitari D, Sterzi R, Wahlgren N, Prencipe M, Toni D; **Safe implementation of thrombolysis in stroke-monitoring study in Italy.** Eur J Neurol. 2010 Jan;17(1):163-7. Jun 15.
4. Wahlgren N, Ahmed N, Dávalos A, Hacke W, Millán M, Muir K, Roine RO, Toni D, Lees KR; **Thrombolysis with alteplase 3-4.5 h after acute ischaemic stroke (SITS-ISTR): an observational study.** Lancet 2008; 372: 1303-1309.
3. Lees KR, Ford GA, Muir KW, Ahmed N, Dyker AG, Atula S, Kalra L, Warburton EA, Baron JC, Jenkinson DF, Wahlgren NG, Walters MR; SITS-UK Group. **Thrombolytic therapy for acute stroke in the United Kingdom: experience from the safe implementation of thrombolysis in stroke (SITS) register.** QJM. 2008 Nov;101(11):863-9. Epub 2008 Aug 11
2. Wahlgren N, Ahmed A, Eriksson N, Aichner F, Bluhmki E, Dávalos A, Erilä T, Ford GA, Grond M, Hacke W, Hennerici M, Kaste M, Köhrmann M, Larrue V, Lees KR, Machnig T, Roine RO, Toni D, Vanhooren G; for the SITS-MOST investigators. **Multivariable analysis of outcome predictors and adjustment of main outcome results to baseline data profile in randomized controlled trials; Safe Implementation of Thrombolysis in Stroke Monitoring Study (SITS-MOST).** Stroke 2008; 39: 3316-3322.
1. Wahlgren N, Ahmed N, Dávalos A, Ford GA, Grond M, Hacke W, Hennerici MG, Kaste M, Külkens S, Larrue V, Lees KR, Roine RO, Soinne L, Toni D, Vanhooren G; **Thrombolysis with alteplase for acute ischaemic stroke in the Safe Implementation of Thrombolysis in Stroke-Monitoring Study (SITS-MOST): an observational study.** Lancet 2007; 369:275-282.

APPENDIX

List with centres contributing with data to the SITS Registry between December 25, 2002 and December 31, 2021.

Country and Hospital	Local Coordinator	Country and Hospital	Local Coordinator
Albania, 9 patients			
National Coordinator:			
To be appointed			
Mother Theresa University Hospital Center	Olsi Taka	Monash Medical Centre	Thanh Phan
Algeria, 124 patients		Nambour General Hospital	Rohan Grimley
National Coordinator: Selma Kesraoui		Northern Health	Douglas Crompton
Hopital Frantz Fanon		Royal Adelaide Hospital	
CHU Benbadis		Sir Charles Gardiner Hospital	
Argentina, 1 172 patients		South West Healthcare	
National Coordinator:		St Vincent's Hospital	Romesh Markus
To be appointed		Tamworth Hospital	James Hughes
CEMIC	Marina Romano	The Queen Elizabeth Hospital	Jim Jannes
Centro Gallego de Buenos Aires	Claudia Gandolfo	The Townsville Hospital	Richard White
FLENI		Wagga Wagga Base Hospital	
Hospital Cordoba		Westmead Hospital	Andrew Evans, Peter Landau
Hospital Privado Santa Clara de Asís	Facundo Enrique Tomas	Austria, 1 319 patients	
Instituto Cardiovascular de Rosario		National Coordinator:	
Policlinico Neuquen	Elsa Pérez	To be appointed	
Ramos Mejia	Raul Rey	Christian-Doppler-Klinik Salzburg	Johannes Sebastian Mutzenbach
Sanatorio Nuestra Senora del Rosario	Pablo Clementti	II. Neurolog. Abteilung Rosenhügel Wien	
Sanatorio Parque	Lorena Jure	Kepler Universitätsklinikum Neuromed Campus	
Armenia, 1 patient		KH der Barmherzigen Schwestern Linz	
National Coordinator:		KH Vöcklabruck	
To be appointed		Klinikum Wels-Grieskirchen	Birgit Hoermanseder
Erebouni Medical Centre	Nune Nune Yeghiazaryan	Krankenanstalt Rudolfstiftung	
Australia, 4 071 patients		Krankenhaus der Barmherzigen Brüder Linz	Christof Bocksruker
National Coordinator:		Krankenhaus der Barmherzigen Brüder Wien	
Romesh Markus		Landeskrankenhaus Tulln	Peter Bosak
Austin Health		Landesnervenklinik Sigmund Freud Graz	
Bankstown-Lidcombe		LKH Steyr	
Bendigo Health	Peter Disler	Med Campus III, Kepler	Milan Vosko
Box Hill Hospital	Christopher Bladin	Mostviertelklinikum Amstetten	
Concord Hospital		Neurologisches Zentrum Rosenhügel	
Flinders Medical Centre	Andrew Lee	Neuromed Campus, Kepler Universitätsklinikum	
Frankston Hospital		Otto-Wagner-Spital Wien	
Fremantle Hospital		Univ.-Klinikum Graz	
Gold Coast Hospital	Peter Bailey	University Hospital Innsbruck	Elke Gizewski
Gosford Hospital	Jonathon Sturm	Waldviertelklinikum Horn	
John Hunter Hospital New South Wales		Weinviertelklinikum Mistelbach	
Liverpool Hospital		Wilhelminenspital	
Lyell McEwin Hospital	Jordie Caulfield	Wr Neustadt	
		Zentralklinikum St. Pölten	
		Zentralklinikum St. Pölten	

Country and Hospital	Local Coordinator
Bahrain, 1 patient	
National Coordinator: Firas Alnidawi	
King Hamad University Hospital	Firas Alnidawi
Belgium, 9 747 patients	
National Coordinator: Geert Vanhooren, Patrice Laloux	
ACZA Stuivenberg - Antwerpen	
ASZ Geraardsbergen	Michiel Marchau
AZ Algemeen Ziekenhuis - Aalst	Wim Wissaert
AZ Alma - Eeklo/Sijsele	Danny Decoo
AZ Damiaan - Oostende	Valerie De Smet
AZ Delta	Marie-Christine Hasenbroekx
AZ Groeninge	Bart Bruneel
AZ Jan Palfijn - Gent	
AZ Jan Portaels	Laurence Peeters
AZ Jan Ypermanziekenhuis - Ieper	Ilke Montag
AZ Klina - Brasschaat	Fran Couvreur
AZ Maria Middelaers - Gent	
AZ Middelheim - Antwerpen	
AZ Monica	Yannick Van Ael
AZ Nikolaas	Bart Siau
AZ Onze-Lieve- Vrouw - Aalst	Miriam Bouckaert
AZ Rivierenland	Massimiliano Montagna
AZ Sint Blasius - Dendermonde	Sabine Magerman
AZ Sint Jan Brugge - Oostende	Geert Vanhooren
AZ Sint Jozef - Malle	Patrick De Wit
AZ Sint Lucas - Brugge	Peter Vanacker
AZ Sint Maarten - Duffel	
AZ Sint Rembert - Torhout	
AZ Sint Vincentius - Antwerpen	
AZ Sint-Lucas - Gent	Robert de Potter
AZ Sint-Maria Halle	Elke Haest, Sylvie Antoine
AZ Turnhout	Katreine Dierckx
AZ Vezalius - Tongeren	
AZ Virga jesse Ziekenhuis - Hasselt	
AZ Waasland - Sint Niklaas	
AZ West	Penka Kirilova
Centre Hospitalier Peltzer Verviers	
CH du Bois de l Abbaye	
CH Reine Fabiola, Montignies	
CHA Libramont	
CHR Tournai	
CHU Brugmann	Raphael Hourez
CHU Hopital Erasme - Bruxelles	
CHU St. Luc - Woluwe	Andre Peeters
CHU Tivoli	
Clinique Saint-Jean, Bruxelles	
Clinique St. Joseph - St. Vith	Peter Heinen
Clinique St.-Pierre - Ottignies	Jean-Marc Raymackers
Cliniques de l Europe	

Country and Hospital	Local Coordinator
Cliniques Saint-Joseph Arlon	Sabina Boangher
Coordination Belgium	
GZA Hospital	William Van Landegem
Heilig Hartziekenhuis Mol	Charlotte Swinnen
Hôpital Civil Charleroi	
Hôpital de Jolimont	
Imeldaziekenhuis - Bonheiden	Patrick Vermeylen
Jessa Hospital	Nina De Klippel
Mariaziekenhuis - Overpelt	Cosmin Cococar
Mont-Godinne University Hospital	Patrice Laloux
Regionaal ziekenhuis H. Hart - Leuven	
RZ Tienen	Elke Peeters
Sint - Andriesziekenhuis	
Sint - Trudo	
UZ Antwerpen - Antwerpen	Laetitia Yperzeele
UZ Brussel	
UZ Gasthuisberg - Leuven	
UZ Gent - Gent	
Bermuda, 43 patients	
National Coordinator: Francene Gayle	
King Edward Memorial Hospital	Francene Gayle
Bolivia, 14 patients	
National Coordinator: To be appointed	
Hospital Materno Infantil	
Bosnia and Herzegovina, 70 patients	
National Coordinator: Sinisa Mijlkovic	
University Clinical Center of Republic of Srpska	Sinisa Mijlkovic
Brazil, 40 969 patients	
National Coordinator: Sheila Martins, Octávio Pontes Neto, Jamary Oliveira-Filho	
Associate National Coordinator: Tony Fabian Alvarez Guzman	
Regional Coordinator: Daniel Escobar Bueno Peixoto, Jose Antonio Fiorot	
Centro Hospitalar Unimed	
Centro Medico de Campinas	Alessandro Sousa
Complexo Hospitalar Unimed Nordeste RS	Fabricio Diniz Kleber
Fundação Santa Casa de Misericórdia de Franca	
Hospital Alianca	Jamary Oliveira-Filho
Hospital Carlos Fernando Malzoni	Cesar Minelli
Hospital das Clinicas da Faculdade de Medicina da Universidade de Sao Paulo (HCFMUSP)	Adriana Conforto
Hospital das Clinicas de Ribeirao Preto	Octávio Pontes Neto
Hospital de Base de Bauru	Marcia Alves Moura Polin

Country and Hospital	Local Coordinator
Hospital de Clínicas da UFPR	Viviane Flumignan Zetola
Hospital de Clínicas da Universidade Federal do Triângulo Mineiro	Alex Eduardo da Silva
Hospital de Clínicas de Porto Alegre	Sheila Martins
Hospital de Clínicas de Uberlândia	Jullyanna Sabrynsa Morais Shinosaki
Hospital de Clínicas Nossa Senhora da Conceição	Ricardo Martello
Hospital de Força Aérea do Galeão	Raissa Lapa
Hospital de Urgência de Sergipe	Larissy Lima Santos
Hospital e Maternidade Santa Isabel	Frederico Nakano
Hospital Espanhol	Jamary Oliveira-Filho
Hospital Estadual Central	Jose Fiorot
Hospital Governador Celso Ramos	
Hospital Icarai	Guilherme Torezani
Hospital Israelita Albert Einstein	Gisele Silva
Hospital LifeCenter	Daniel Vilela
Hospital Lucio Rebello	Luiz Antonio Freitas de Oliveira
Hospital Mãe de Deus	Maurício Andre Gheller Friedrich
Hospital Maria Auxiliadora	Thais Martins
Hospital Mater Dei Contorno	Julia Kallás
Hospital Meridional Cariacica	Jose Antonio Fiorot
Hospital Metropolitano Doutor Celio de Castro	Barbara Arduini Fernandes Correa
Hospital Moinhos de Vento	
Hospital Moinhos de Vento	Alexandre Maulaz, Tony Fabian Alvarez Guzman
Hospital Municipal do Campo Limpo	Vinicius Garcia de Vitro
Hospital Municipal Dr Arthur de Riberiro Saboya	
Hospital Municipal São José	Carla Moro
Hospital Municipal Souza Aguiar	
Hospital Odilon Behrens	Leonardo Cunha
Hospital Paulistano	Luciano Magalhaes Melo
Hospital Primavera	Guilherme Silva
Hospital Regional do Cariri	Gustavo Vieira Rafael
Hospital Regional do Sertao Central	Alan Alves de Lima Cidrao
Hospital Regional Justino Luz	Tercio Luz Barbosa
Hospital Santa Catarina de Blumenau	Barbara Boettger
Hospital Santa Isabel	
Hospital Santa Lucia Norte	Thais Martins
Hospital Santa Lúcia Sul	Thais Martins
Hospital Santa Paula	Renata Faria Simm
Hospital Santa Rosa	Thais Augusta da Costa Martins Thais
Hospital Sao Carlos	
Hospital Sao Jose	Gisele Borges de Medeiros
Hospital São Judas Tadeu	Carlos Eduardo Massote Fontanini
Hospital Sao Lucas PUCRS	
Hospital Sao Paulo - Unimed Araraquara	Matheus Fernando Manzoli Ballesterio
Hospital Unimed Vitoria	Daniel Escobar
Hospital Universitário de Santa Maria	Fábio Pascotto de Oliveira
Hospital Universitario Maria Aparecida Pedrossian	Gabriel Braga

Country and Hospital	Local Coordinator
Hospital Veredas	Leticia Januzi de A. Rocha
Hospital Vita	Hudson Fameli
Instituto Cardiopulmonar	Murilo Souza
Instituto de Neurologia de Goiânia	Marco Aurelio Fraga borges
Instituto Hospital de Base do Distrito Federal	Leticia Rebello
Irmandade Nossa Senhora das Mercês - Santa Casa de Montes Claros	Marcílio Catarino Monteiro
Mater Dei Santo Agostinho	Henrique Silva
Santa Casa de Ituverava	Luiz Monteiro de Barros
Santa Casa de Misericórdia de Maringá	Vinicius Rebola Danielli
Santa Casa de Misericórdia de Passos	Paulo Prado de Vasconcelos
Santa Casa de Misericórdia de Porto Alegre	Daiane Piccolotto Carvalho Camargo
Santa Casa de Misericórdia e Asilo dos Pobres de Batatais	Antonio Marcos Barbosa da Silva
Santa Casa de Sao Paulo	Rubens Gagliardi, Vivian Gagliardi
São João Batista - Grupo Unimed	Tamiris Dal Bó Martinello
São Lucas Hospital	Andrea Garcia de Almeida
Sociedade Portuguesa de Beneficencia de Ribeirao Preto - Hospital Imaculada Conceição	Larissa Helena
Unimed Chapeco	Cristiane de Camargo e Silva
Unimed Ribeirao Preto	Soraia Ramos Cabette Fabio

Bulgaria, 5 015 patients

National Coordinator: Silva Andonova

MBAL - St.Anna	Gabriela Antonova
MHAT Medika	Iskra Ivanova-Ezhova
MHAT - Dobrich	Boryana Ilcheva
MHAT - Plovdiv	Alexandar Geritliev
MHAT - Shumen	Nikolai Nikolov
MHAT - Silistra	
Multiprofile Hospital for Active Treatment	Tania Miteva
Sveta Marina Varna	Mihael Tsalta-Mladenov, Prof. Silva Andonova
University Multiprofile Hospital for Active Treatment "St. Anna" Sofia (BGSOF)	Rosen Kalpachki

Chile, 1 595 patients

National Coordinator: Arnold Hoppe

Clinica Alemana de Santiago	Arnold Hoppe
Clinica Alemana de Temuco	
Clinica Renaca	
Hernan Henriquez Aravena	Alvaro Soto Venegas
Hospital Carlos van Buren	Juan P. Gigoux
Hospital Fach	Carlos Aguilera
Hospital Naval Almirante Nef	Pablo Araya
Hospital San Pablo de Coquimbo	Fernando Molt

Country and Hospital	Local Coordinator
China, 260 patients	
National Coordinator:	
To be appointed	
The First Affiliated	
Guangzhou Medical College	
The First Affiliated	
Hospital JiNan University	
1st Municipal Peoples Hospital	
Guangzhou	
An Zhen Hospital	
Anhui Provincial Hospital	
Beijing Military General Hospital	
Beijing Tiantan Hospital	
Beijing Tsinghua Changgung Hospital	Jian Wu, Ye Wang
Da Ping hospital	Jing Mei, Yan-Jiang Wang
Haidian Hospital Beijing City	
Hua Shan Hospital	
Hubei Zhongshan Hospital	Du Min
No. 411 Hospital	
Shanghai Sixth Peoples Hospital	
Shanxidai Hospital	Yaqin Yu
The Branch of Shanghai first Hospital	
The First Affiliated Hospital of	
Guang-Zhou University of Chinese	
Medicine	
The First Affiliated Hospital	Bo Song
of Zhengzhou University	
Third Hospital of Sun Yat-sen University	
Xinhua Hospital Affiliated to Shanghai	Jiafu Liu
Jiaotong University School of Medicine	
Xuanwu Hospital Capital Medical	
University	
Zhongshan Hospital - Fudan University	Wei Fan
Colombia, 385 patients	
National Coordinator:	
Mario Muñoz-Collazos	
Clinica de Marly	Mario Munoz-Collazos
Clinica Misael Pastrana	
Clinica Shaio	
Clinica Universitaria Universidad	
Nacional de Colombia	
DIME Clinica Neurocardiovascular	Daniel Echeverri
Fundacion Santa Fe	Carlos Martinez
Fundacion Santa Fe de Bogota	
Hospital de Kennedy	Andres Betancourt
Hospital El Tunal	Juan Camilo Vargas
Hospital Universitario San Ignacio	Juliana Coral
Costa Rica, 38 patients	
National Coordinator: Miguel Barboza	
Hospital San Juan de Dios	
Croatia, 1 608 patients	
National Coordinator: Vanja Bašić Kes	
County Hospital Varazdin	
General Hospital Dr. Josip Bencevic	Marinko Dikanovic
General Hospital Dubrovnik	Maro Vodopić

Country and Hospital	Local Coordinator
General Hospital Vukovar	Sanja Svalina
KBC Rijeka	Sinisa Dunatov
Opća bolnica Karlovac	Jasna Bozic
Opća bolnica Šibenik	Anka Aleksić Shihabi
Osijek Clinical Hospital Centre	Mihael Mišir
Sestre Milosrdnice University Hospital	Vesna Vargek Solter,
	Bašić Kes Vanja
University Hospital Center Split	Ivo Lusic
University Hospital Center Zagreb	Branko Malojcic
University Hospital Dubrava	
University Hospital Sveti Duh	Hrvoje Budincevic
Virovitica General Hospital	Boris Bencina
University Hospital Center Zagreb	Branko Malojcic
University Hospital Dubrava	
University Hospital Sveti Duh	Hrvoje Budincevic
Virovitica General Hospital	Boris Bencina
Czech Republic, 33 123 patients	
National Coordinator:	
To be appointed	
Cheb Nemocnice	
Chrudim Nemocnice	
Fakultní Thomayerova Nemocnice	
FN Brno	Stanislav Peska
FN Bulovka	Peter Vasko
FN Hradec Kralove	Eva Vitkova
FN Kralovske Vinohrady	Tomas Peisker
FN Motol	Ivana Šarbochová
FN Olomouc	Daniel Sanak
FN Ostrava	Eva Hurtikova
FN Plzen	Petr Sevcik
FN u sv Anny v Brne	Lenka Kouřilová, Robert Mikulík
Frydek-Mistek nem	
Havirov	
Jicin Nemocnice	
Karvinska Hornicka Nemocnice	Henryk Brzeżański
Krajska nemocnice Liberec	Lubomir Jurak
Kyjev Nemocnice	Pavel Zichacek
Nemocnice Benesov	Zdenek Waller
Nemocnice Blansko	Jana Jankovych
Nemocnice Breclav	Zdena Bajková
Nemocnice Ceska Lipa	Alan Treuchel, Ondrej Koci
Nemocnice Ceske Budejovice	Miroslava Nevšimalová
Nemocnice Chomutov	Jiri Neumann
Nemocnice Decin	Jan Novák
Nemocnice Havlickuv Brod	Jaroslav Říman
Nemocnice Jihlava	Marek Pernicka
Nemocnice Jindrichuv Hradec	
Nemocnice Karlovy Vary	Igor Karpowicz
Nemocnice Kladno	Petra Kešnerová, Richard Brzezny

Country and Hospital	Local Coordinator
Nemocnice Kolin	Ludmila Bláhová
Nemocnice Litomerice	
Nemocnice Litomysl	Zdenek Novotny, Marian Kuchar
Nemocnice Melnik	Barbora Křiváková
Nemocnice Mlada Boleslav	Martin Koutny
Nemocnice Most	Stanislav Slavík
Nemocnice Na Homolce	Martin Kovar
Nemocnice Nachod	Petr Stepan
Nemocnice Nove Mesto na Morave	Květoslava Večeřová
Nemocnice Nový Jičín	Petr Kuba
Nemocnice Opava	
Nemocnice Ostrava	Lukas Klecka
Nemocnice Pardubice	Petr Geier
Nemocnice Pisek	Robert Rezek
Nemocnice Pribram	Jan Kábrt
Nemocnice Prostějov	Vojtěch Mrňka
Nemocnice Rychnov nad Kneznou	Jan Fajstauer
Nemocnice Sokolov	Aleš Novák
Nemocnice Strakonice	Pavel Houška
Nemocnice Teplice	
Nemocnice Trinec Sosna	Mateusz Mrózek
Nemocnice Trutnov	Michal Bednar
Nemocnice Uherske Hradiste	Emanuela Habrovanská
Nemocnice Usti nad Labem	
Nemocnice Usti nad Orlici	Květa Chotěnovská
Nemocnice Vítkovice	Katerina Blejcharova
Nemocnice Vyskov	Jana Kadlickova
Nemocnice Zlin	
Nemocnice Znojmo	Vladislav Kopecky
Okresni Nemocnice Tabor	
Praha - Nemocnice na Frantisku	
Prerov Nemocnice	
SZZ Krnov	Vladimir Sigut
Ustredni Vojenska Nemocnice	Roman Havlíček
VFN Neurol.kl.1.LF a UK	Jan Fiksa
Vojenska Nemocnice Brno	Jiri Stehlik

Denmark, 2 375 patients

National Coordinator:
Hanne Christensen

Aalborg Hospital	Karsten Vestergaard
Bornholms Central sygehus	
Holstebro	
Odense University Hospital	
Roskilde	Troels Wienecke
Sydvestjysk Hospital Esbjerg	
University Hospital of Cph at Bispebjerg	Hanne Christensen
University Hospital of Cph at Gentofte	
University Hospital of Cph at Glostrup	Helle Klingenberg Iversen
Århus Hospital, Århus University Hospital	

Country and Hospital	Local Coordinator
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Dominican Republic, 449 patients

National Coordinator:
To be appointed

Juan Pablo Pina	Margarita Cerdá
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Ecuador, 424 patients

National Coordinator:
To be appointed

Carlos Andrade Marín	Braulio Martínez Burbano
Hospital Especialidades Eugenio Espejo	Dannys Rivero Rodriguez
Hospital Metropolitano	Patricio Abad
Hospital Teodoro Maldonado Carbo	

Egypt, 10 364 patients

National Coordinator: Hany Aref

Regional Coordinator: Mohamed Abdelrahman Ahmed, Wafik Bahnasy, Husam Mourad

Ain Shams Specialized Hospital	Hossam Shokri
Ain Shams Universities	Tamer Roushdy, Hany Aref
Al Shorouk	
Al-Azhar University Hospitals	Ahmed Essmat
Alexandria University (Stroke Center)	Ossama Mansour
Assiut University Hospitals	Mohamed Abdelrahman Ahmed
Aswan University Hospitals	Ahmed Abdelwarith
Beni Suef University Hospital	Mohammed Oraby
Cairo University Hospitals	Husam Mourad
Cairo University Hospitals	Mohammad Farrag
Mansoura University Hospital	Hossam Egila
Menofia University Hospital	Khaled Afifi
Minia University Hospital	Ahmed Mohamed Ibrahim Abdalla
Misr International Hospital	Sandra Ahmed
Nasser Institute Hospital	Tarik Ibrahim Menecie
New Nozha Hospital	Amr Elfatraty
Saudi German Cairo	Shady Georgy
Sohag University	Mohamed Khodery
Tanta University Hospital	Azza Ghali, Wafik Bahnasy
Zagazig University	May Selim

El Salvador, 39 patients

National Coordinator:
To be appointed

HMQ ISSS	
Hospital Diagnostico Escalon	William Arias Sifontes
Hospital Nacional Rosales	Ericka Lopez

Estonia, 5 506 patients

National Coordinator: Janika Kõrv

East-Tallinn Central Hospital	Viktor Jefremov
LTKH	Katrin Gross-Paju
North Estonia Medical Centre	Viiu-Mariika Rand
Tartu University Hospital	Janika Kõrv

Country and Hospital	Local Coordinator
Ethiopia, 0 patients	
National Coordinator: Yared Yifru	
Finland, 4 109 patients	
National Coordinator: Daniel Strbian	
Central Hospital of Central Finland	Minna Hälinen
Central Hospital of Central Finland	
Central Hospital of Kainuu	
Central Hospital of Lapland	Lauri Soinne, Daniel Strbian
Etelä-Karjalan Keskussairaala	
Helsinki University Central Hospital	
Kanta-Häme Central Hospital	Pekka Jäkälä
Kuopio University Hospital	
Kuusankoski District Hospital	
Kymenlaakso Central Hospital	Vesa Karttunen
Länsi-Pohja Central Hospital	
Mikkeli Central Hospital	
Oulu University Hospital	Jyrki Ollikainen
Pohjois-Karjalan Keskussairaala	
Päijät-Häme Hospital District	
Satakunta Central Hospital	Susanna Roine, Anna Järvinen
Savonlinna Central Hospital	
Seinäjoki Central Hospital	
Tampere University Hospital	Susanna Roine, Anna Järvinen
Turku University Central Hospital	
Ålands Centralsjukhus	
France, 354 patients	
National Coordinator:	
To be appointed	
Angouleme	
Bordeaux	
Bourg en Bresse	
Centre Hospitalier Belfort Montbéliard	
Dijon	
Hopital Emile Muller	
Lille	
Montpellier	
Nancy	
Nice	
Perpignan	
Purpan Hospital	
Rangueil	
Sainte Anne Paris	
Tenon	
Tours	
Germany, 8 307 patients	
National Coordinator: Peter Ringleb	
Carl-Thiem-Klinikum	Antje Herwig
Charité - Campus Benjamin Franklin	
Diakonissenkrankenhaus Flensburg	Stefan Müller-Hülsbeck
Herz-Jesu-Krankenhaus	Michael Ohms
JWK Minden	Joerg Glahn
Katharinenhospital	Marta Aguilar-Perez

Country and Hospital	Local Coordinator
Katholisches Klinikum Koblenz	
Brüderhaus	
Klinikum Bremen Mitte	
Klinikum Dortmund gGmbH	
Klinikum Frankfurt / Oder	Andreas Hartmann
Klinikum Ludwigsburg	Georg Pawlik
Klinikum Ludwigshafen	
Klinikum Mittelbaden	
Klinikum Osnabrueck	Lars Krause
Klinikum Villingen-Schwenningen	
Krankenhaus Nordwest	
Krankenhaus Schwabing	
Kreisklinik Mindelheim	
Kreisklinikum Siegen	
Landeskliniken Teupitz	
Neurologische Universitätsklinik Köln	
Ruppiner Kliniken GmbH	
St. Bonifatius Hospital	
Städt.Krankenhaus	
München-Harlaching	
TU Munich	
Univ.Hospital Mannheim	
University Clinic Essen	Christian Weimar
University Hospital	Bastian Kraus, Dorothea Reichelt
Düsseldorf	
University Hospital Jena	Albrecht Guenther
University Hospital of Heidelberg	Peter Ringleb
University Medicine Greifswald	Soenke Langner
University of Leipzig	Dominik Michalski
University Tübingen	Sven Poli, Till-Karsten Hauser
Universitätsklinik	Jens Eyding
Knappschaftskrankenhaus	
Universitätsklinik Münster	
Universitätsklinikum Bonn	Gabor Petzold
Universitätsklinikum Gießen	
Universitätsklinikum	Olav Jansen
Schleswig-Holstein	
Campus Kiel	
Westfal-Klinikum GmbH	Martin Morgenthaler
Zentralklinikum Augsburg	
Greece, 2 847 patients	
National Coordinator: Georgios	
Tsivgoulis, Panayiotis Mitsias, Jobst	
Rudolf, Kostas Vemmos	
"St. Panteleimon" General State Hospital of Piraeus	Ioannis Markakis
"Tzaneio" General Hospital of Piraeus	Andromachi Roussopoulou
251 Hellenic Air Force General Staff Hospital	Antonios Kodounis
Agios Pavlos	Nikolaos Michalis
AHEPA University Hospital	Theodoros Karapanayiotides
Athens Medical Center	Klimentini Karageorgiou
Athens Naval Hospital	Triantafyllos Doskas
Attikon University Hospital	Konstantinos Voumvourakis, Georgios Tsivgoulis
Eginition	Sofia Vassilopoulou
Euroclinic	Vaso Zisimopoulou
Evangelismos General Hospital	Antonios Tavernarakis

Country and Hospital**Local Coordinator**

G.Papanikolaou Hospital	Ourania Argyropoulou-Raka
General Hospital of Athens	Maria Gryllia
General Hospital of Imathia	Georgios Georgakoudas
General Hospital of Rethymnon	Athanasia Patousi
General Hospital of Rhodes, Andreas Papandreou	Kaliontzoglou Anastasia
General Hospital of Serres	Konstantinos Natsis
Korgialenio-Benakio Greek Red Cross	Thomas Thomaidis
General Hospital of Athens	
Larisa Regional General Hospital	
Mediterraneo Hospital	Nikolaos Tsamopoulos
Metropolitan	Eleftherios Staboulis
Metropolitan General	Konstantinos Takis
Papageorgiou General Hospital	Jobst Rudolf
Thriassio Hospital	Teresa Acquaviva
University Hospital of Alexandroupolis	Konstantinos Vadikolias
University Hospital of Heraklion	Panayiotis Mitsias
University Hospital of Ioannina	Sotirios Giannopoulos
University Hospital of Larissa	Efthimios Dardiotis
University Hospital of Patras	Yiannis Ellul

Guatemala, 89 patients**National Coordinator:****To be appointed**

Hospital General San Juan de Dios	Arla Stokes, Edgar Avalos Herrera, Otoniel Gramajo
Hospital Herrera Llerandi	Luis Salguero
Hospital Roosevelt	Ligia Rodas

Honduras, 22 patients**National Coordinator: Marco T. Medina**

Hospital Escuela	Marco T. Medina
Hospital Nacional Dr. Mario Catarino Rivas	Arnold Rene Thompson
Instituto de Neurociencias	

Hong Kong, 24 patients**National Coordinator: Thomas Wai Hong Leung**

Prince of Wales Hospital	Vincent Ip
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Hungary, 2 049 patients**National Coordinator: Klára Fekete**

Aladar Petz County Hospital	Gergely Toth
B.-A.-Z. County Hospital	Erika Barna
Bajcsy Zsilinszky Korház	Balázs Czigler
Dr Kenessey Albert Hospital	Csaba Óváry
Fejér Megyei Szent György Korház	Levente Kerenyi
Felső Szabolcsi Korház	Félix Bencsik
Flor Ferenc Hospital	
Javorszky Odon	Ferenc Nagy, Anett Tóta
Josa Andras Oktatókorház	Tamas Kokovay
Egészsegügyi Szolgáltató Nonprofit Kft.	
Kanizsai Dorottya Korház	Marianna Gottschál

Country and Hospital**Local Coordinator**

Pandy Kalman Korház	
Peterfy Sandor u. Korház	
Semmelweis University	
State Health Centre	
Szent Borbála	Ferenc Nagy
Szent Rokos Hospital	
University of Debrecen	László Csiba, István Fekete, Klára Fekete
University of Pecs Medical School	

Iceland, 8 patients**National Coordinator:****To be appointed**

Landspítali University Hospital	
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India, 10 804 patients**National Coordinator:****Dheeraj Khurana****Regional Coordinator: Amit Phogat**

All India Institute of Medical Sciences	Rohit Bhatia, M.V.Padma
AMRI Hospitals	
AMRI Institute of Neurosciences, AMRI Hospitals, Mukundapur	
Apollo Gleneagles Hospitals	
Apollo Hospitals Hyderabad	
Baby Memorial Hospital	
Care Hospital	
Christian Medical College Hospital	Sanjith Aaron
Civil Hospital Sangrur	Rahul Gupta
Civil Hospital Ambala Cantt	Sanjeev Goyal
Civil Hospital Jalandhar	Tarsem Lal
Civil Hospital Ludhiana	
Civil Hospital, Sector 6, Panchkula	Civil Hospital Civil Hospital
District Civil Hospital Gurugram	Kajal Kumud
District Hospital Sonapat	Shailander Rana
Fortis Hospital	Neetu Ramrakhiani
Gleneagles Global Health City	Halprashanth D.S.
Government Medical College - Patiala	Khushvinder Sherry
Hiranandani Hospital	Pawan Ojha
Jehangir Hospital Apollo Hospitals Group	
Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute	Shirish Hastak
Lalitha Super Speciality Hospital	
Lilavati Hospital and Research Centre	Amrita Kiki
Little Flower Hospital - Research Centre	
Lourdes Hospital neurology	
Maharishi Markandeshwar Institute of Medical Sciences and Research	Ankush Sharma
Max Hospital Shalimar Bagh	Manoj Khanal
Medanta the Medicity	Arun Garg
N. M. Virani Wockhardt Hospital	Nirav Sanghani
NH Mazumdar Shaw Medical center	Vikram Huded
Nizams Institute of Medical Sciences	
Pondicherry Institute of Medical Sciences	Venugopalan Vishnu

Country and Hospital	Local Coordinator
Postgraduate Institute of Medical Education & Research Ruby Hall Clinic	Dheeraj Khurana
Wockhardt Hospital Nagpur	Ankur Jain
Wockhardt Hospital Nashik	Dhananjay Duberkar
Wockhardt Hospitals Ltd, Unit- Adams Wylie Memorial	Shirish Madhav Hastak
Iran, 20 581 patients	
National Coordinator: Mehdi Farhoudi	
Associate National Coordinator: Elyar Sadeghi-Hokmabadi	
Sina	Mojtaba Khazaei
Ali-Ebn-Abitalib Hospital	Alireza Vakilian
Alzahra	Mohammad Saadatnia
Bou-Ali Sina	Athena Sharifi-Razavi
Firoozgar General Hospital	Masoud Mehrpour
Ghaem	Kavian Ghandehari
Golestan	Bahador Asadi Khansari
Golestan Hospital	Shahram Rafie
Imam Husain Hospital	Behnam Mansouri
Imam Reza	Elyar Sadeghi-Hokmabadi, Mehdi Farhoudi
Imam Reza Kermanshah	Payam Sariaslani
Nemazee Hospital	Afshin Borhani-Haghighi
Razi Hospital	Mazyar Hashemilar
Shahid Beheshti	Ehsan Sharifipour
Shahid Beheshti	Soroosh Advani
Shahid Beheshti	Abdoreza Ghoreishi
Imam Reza	Elyar Sadeghi-Hokmabadi, Mehdi Farhoudi
Imam Reza Kermanshah	Payam Sariaslani
Nemazee Hospital	Afshin Borhani-Haghighi
Razi Hospital	Mazyar Hashemilar
Shahid Beheshti	Ehsan Sharifipour
Shahid Beheshti	Soroosh Advani
Shahid Beheshti	Abdoreza Ghoreishi
Ireland 57 patients	
National Coordinator: To be appointed	
Mater Misericordiae University Hospital	
St James Hospital	
St Vincent s University Hospital	Tim Cassidy
Israel 394 patients	
National Coordinator: Roni Eichel	
Barzilai Hospital	
Bnai-Zion Medical Centre	
Hadassah Ein-Kerem	Roni Eichel
Hadassah University Hospital	Roni Eichel
Hillel Yaffe Medical Center	Sergiu Sabetay
Makassed Islamic Charitable Hospital	Anis Naser
Sheba Medical Center	
Tel-Aviv Sourasky Medical Center	

Country and Hospital	Local Coordinator
Italy, 142 828 patients	
National Coordinator: Danilo Toni	
Regional Coordinator: Marco Longoni, Maurizio Balestrino, Marzia Baldereschi, Paolo Cerrato, Simona Sacco, Domenico Consoli, Marcello Naccarato, Francesco Federico, Rosa Musolino, Andrea Zini, Maurizio Melis	
P.O. Gravina e Santo Pietro di Caltagirone	Franz La Greca
Di Venere	
Giuseppe Mazzini Teramo	Maurizio Assetta
Luigi Sacco Hospital	Leonardo Pantoni, Pierluigi Bertora
Santa Chiara Hospital	Michelangelo Mancuso
A.O. G. Rummo	Michele Feleppa
A.O. Spedali Civili di Brescia	Mauro Magoni
A.O.U. Policlinico G. Martino Messina	Rosa Musolino
A.O.U. San Giovanni di Dio e Ruggi d'Aragona	Rosa Napoletano
A.S.O. S. Croce e Carle	Piero Meineri
Antonio Cardarelli Campobasso	Nicola Iorio
Antonio Perrino	Cecilia Nozzoli
A.O. S.G. Moscati	Florindo d'Onofrio
AO di Lodi	
AOR San Carlo Potenza	Antonio Matera
Arcispedale Santa Maria Nuova	Giovanni Malferrari
ARNAS Garibaldi	Antonino Pavone
ASST Franciacorta	Vincenzo Sidoti
ASST Mantova, Carlo Poma	Giorgio Silvestrelli
Augusto Murri	Patrizio Cardinali
Azienda Ospedaliera Bianchi-Melacrino-Morelli	Luciano Arcudi
Azienda Ospedaliera Cannizzaro	Pennisi Maria Giovanna
Azienda Ospedaliera di Cosenza	Alfredo Petrone
Azienda Ospedaliera G.Salvini	Maria Grazia Riggio
Azienda Ospedaliera Pugliese-Ciaccio	
Azienda Ospedaliera s. Maria Degli Angeli Pordenone	Paolo Passadore
Azienda Ospedaliera S. Maria Terni	Franco Costantini
Azienda Ospedaliera Universitaria Integrata Verona	Manuel Cappellari
Azienda Ospedaliera Universitaria Policlinico Paolo Giaccone di Palermo	Paolo Aridon
Azienda Ospedaliera Universitaria Senese	Tassi Rossana
Azienda Ospedaliera Valtellina e Valchiavenna	Salvatore Creta
Azienda Ospedaliero - Universitaria di Parma	Umberto Scoditti
Azienda Ospedaliero Universitaria Ospedali Riuniti di Foggia	
Azienda Sanitaria Universitaria Giuliano Isontina	Marcello Naccarato
B. Ramazzini	Mario Baratti
Belcolle	Nicola Falcone
Bentivoglio Hospital	Marco Masina
Buccheri La Ferla	Aurelio Piazza

Country and Hospital	Local Coordinator
Cà Foncello	Simone Tonello
Careggi	Patrizia Nencini, Marzia Baldereschi
Carlo Urbani	Emanuele Medici
Casa Di Cura Dott. Pederzoli S.P.A.	Domenico Idone
Casa Sollievo della Sofferenza	Pietro Di Viesti
Castiglione del Lago	Enrico Righetti
Cazzavillan	Michela Marcon
Ceppo	
Civil Hospital, Macerata	Katiuscia Nardi
Crema	
E.O. Ospedali Galliera	Daria Bianchini
Fabrizio Spaziani	Antonia Nucera, Maurizio Plocco
Felice Lotti . P.O. Pontedera (Pisa)-AUS-LToscana Nordovest	Chiara Pecori
Fond Polambulanza Brescia	Paolo Invernizzi
Fondazione Ca' Granda Maggiore Milano	Sara Bonato
Fondazione Istituto G. Giglio	Luigi Grimaldi
G B Morgagni L Pierantoni Forlì	Matteo Paolucci, Silvia Strumia
Giovanni Paolo II	Emanuele Caggia
Gradenigo Hospital	Pietro Pignatta
Guglielmo da Saliceto	
Hospital ASST West Milanese	Francesco Muscia
INRCA	Giuseppe Pelliccioni, Maurizio Del Gobbo, Osvaldo Scarpino
IRCCS Centro Neurolesi Bonino Pulejo	
Ospedale Piemonte	
IRCCS Policlinico San Matteo-Casimiro Mondino	Anna Cavallini
IRCCS Sacro Cuore Don Calabria	Alessandro Adami
Istituto Clinico Città Studi	Carlo Sebastiano Tadeo
Istituto Clinico Humanitas	Simona Marcheselli
Istituto Scientifico Ospedale San Luca (Istituto Auxologico Italiano)	Laura Adobbati
Jazzolino	Domenico Consoli
Livorno	Alessio Bertini, Paolo Pennati
Madonna del Soccorso Hospital	Emanuele Puca
Maggiore della Carità Novara	Roberto Tarletti
Mater Salutis Hospital	Michelangelo Turazzini
Maurizio Bufalini	Anna Maria Mauro, Simonetta Morresi, Marco Longoni
Molinette	Paolo Cerrato
Morelli Sondalo	Giacomo Giuseppe Bezzi
Neuromed	
O.C. Renzetti	Antonio Giusti
Osedali Riuniti Ancona	Leandro Provinciali
Osp Circolo Busto Arsizio	Luigia Irene Neromante
Ospedale S. Maria delle Croci	Gabriele Ciucci, Marina Padroni
Ospedale San Pio da Pietrelcina	Stefano Viola
Ospedale Umberto I - Enna	Salvatore Zappulla
Ospedale A Manzoni Lecco	Davide Sangalli
Ospedale Antonio Cardarelli	Paolo Candelaresi
Ospedale Bassa Val di Cecina	Paolo Pennati
Ospedale Brotzu Cagliari	Maurizio Melis
Ospedale Cardinal Massaia	Alessandra Lentini, Marco Aguggia

Country and Hospital	Local Coordinator
Ospedale Ciriè	Diego Maria Papurello
Ospedale Civico di Chivasso	
Ospedale Civico Palermo	Serena Monaco
Ospedale Civile S. Agostino-Estense - Azienda Ospedaliera Universitaria di Modena	Guido Bigliardi
Ospedale Civile Cittadella	Giampietro Ruzza
Ospedale Civile di Conegliano (Treviso)	Anna Gaudenzi
Ospedale Civile di Ivrea	
Ospedale Civile Elbano	Elisabetta Bollani
Ospedale Civile Mirano	Luigi Bartolomei
Ospedale Civile Spirito Santo Pescara	Francesco di Blasio
Ospedale Civile Venezia, U.O.C. Neurologia	Agnese Tonon
Ospedale degli Infermi	
Ospedale del Mare	Odm.stroke
Ospedale dell'Angelo	Adriana Critelli
Ospedale della Misericordia	Roberto Marconi
Ospedale della Murgia "F. Perinei"	Bonaventura Ardito
Ospedale della Versilia	Paolo Del Dotto
Ospedale delle Apuane	Alberto Chiti
Ospedale Desio	Ignazio Michele Santilli
Ospedale di Circolo e Fondazione Macchi Varese	Maurizio Versino
Ospedale di Città di Castello	Silvia Cenciarelli
Ospedale di Fidenza (Parma)	Letizia Concarì
Ospedale di Saronno	Mauro Roncoroni
Ospedale di Stato	Mirco Volpini
Ospedale di Treviglio	Edgard Matta
Ospedale di Vimercate	Paola Bazzi
Ospedale Edoardo Agnelli	Carmela Palmieri
Ospedale G.B. Grassi - ASL Roma 3	Giovanni Pauletti
Ospedale Immacolata Concezione	Edoardo Mampreso
Ospedale Imperia	Mauro Furlan
Ospedale Infermi	
Ospedale Lavagna	Giuseppe Trivelli
Ospedale Maggiore	Andrea Zini
Ospedale Maria Vittoria Torino	Fabio Melis
Ospedale Martini Torino	Lidia Sarro
Ospedale Mauriziano Torino	Ivana Bosone
Ospedale Moriggia-Pelascini	Davide Ferrazzoli, Simone Vidale
Ospedale Niguarda Ca' Granda	Giuditta Giussani
Ospedale Novi Ligure	Eugenia Rota
Ospedale Papa Giovanni XXIII	Maria Sessa
Ospedale Provinciale di Bolzano	Elisa Dall'Ora
Ospedale Regionale della valle d'Aosta	Guido Giardini
Ospedale Regionale Miulli	Giovanni Manobianca
Ospedale S. Donato Arezzo	Giovanni Iannelli
Ospedale S. Elia Caltanissetta	
Ospedale S. Eugenio	Letizia Maria Cupini
Ospedale S. Maria del Prato	Giulio Bozzato
Ospedale S. Maria della Scaletta	Maria Chiara Cantarini

Country and Hospital	Local Coordinator
Ospedale S. Maria Misericordia Udine	Simone Lorenzut
Ospedale San Bassiano	Emanuele Turinese
Ospedale San Bortolo	Francesco Perini
Ospedale San Gerardo	Simone Beretta
Ospedale San Giovanni Battista	Pierluigi Brustenghi
Ospedale San Lazzaro - Alba	Marco Giraud
Ospedale San Luca	Alessandro Napolitano
Ospedale San Salvatore-L'Aquila	Carmine Marini
Ospedale Sant'Anna	
Ospedale Santa Corona	Tiziana Tassinari
Ospedale Santa Maria Annunziata Firenze	Germana Ruggiano
Ospedale Santa Maria della Misericordia di Rovigo	Monia Russo
Ospedale Santa Maria Nuova	Francesco Prosperi Iovi
Ospedale Santo Spirito - Rome	Monica Carfora
Ospedale Santo Spirito Casale Monferrato	Delfina Ferrandi
Ospedale SS Filippo e Nicola	Simona Sacco
Ospedale Umberto I Siracusa	Enzo Sanzaro
Ospedale Valduce Como	Nicoletta Checcarelli
Ospedali Riuniti di Foggia	Tommaso Martino
Ospedaliere Santa Croce di Fano	Andrea Plutino
P.O. R. Guzzardi	Antonello Giordano
P.O. San Francesco	Maria Valeria Saddi
P.O.M Villa Scassi ASL3 Genova	Paola Perfumo
PO Gorizia-Monfalcone	Michele Rana
PO Vizzolo	Carla Zanferrari
Policlinico Bari	Marco Petruzzellis, Francesco Federico Fabio Pilato
Policlinico Campus Biomedico	
Policlinico Gemelli	Giovanni Frisullo
Policlinico San Marco	Massimo Camerlingo
Policlinico San Matteo	
Policlinico tor Vergata	Fabrizio Sallustio, Marina Diomed
Policlinico Umberto I - University La Sapienza	Daniilo Toni
Policlinico Universitario Padova	
Policlinico Universitario Padova Neurol	Claudio Baracchini
Presidio Ospedaliero Sant'Andrea La Spezia	Antonio Mannironi
Presidio Ospedaliero Cremona	Alessia Giossi
Presidio Ospedaliero Umberto I	Teresa Cuomo
R. Dimiccoli	Ruggiero Leone
Rivoli	Salvatore Amarù
S. Giovanni Calibita Fatebenefratelli	Francesco Passarelli
S. Andrea Vercelli	Cristoforo Comi
S. Anna Hospital	Alessandro De Vito
S. Elia	Maria Giovanna Randisi
S. Orsola-Malpighi	Maria Guarino
Saint Antonio Abate Sicily	Luigi Sicurella
San Biagio	Angelo Villani
San Camillo de Lellis	Antonio Salerno
San Camillo-Forlanini	Sabrina Anticoli
San Carlo Borromeo	Simone Tonietti

Country and Hospital	Local Coordinator
San Filippo Neri	
San Giacomo Apostolo	Bruno Marini
San Giovanni Addolorata	Anna Rosa Casini
San Giovanni Bosco	Roberto Cavallo
San Giovanni di Dio	
San Giovanni di Dio Agrigento	Rosa Avarello
San Giovanni di Dio Hospital. ASP Crotone	Massimiliano Plastino
San Giuseppe	
San Giuseppe	Paola Bartalucci
San Jacopo Hospital	Chiara Menichetti
San Leopoldo Mandic	Manuela Vaccaro
San Luigi Gonzaga	Rossella Sciolla
San Martino	
San Martino Genova	Laura Malfatto
San Martino Hospital	Franco Ferracci
San Paolo	Fabio Bandini
Sandro Pertini Hospital	Steno Rinalduzzi
Sant'Andrea	Mario Beccia
Sant'Anna	Giampiero Grampa, Laura Fusi
Sant'Anna e San Sebastiano Caserta	Gioacchino Martusciello
Sant'Antonio Hospital	Anna Maria Basile
Santa Chiara Hospital	Valeria Bignamini
Santa Croce Moncalieri Maggiore di Chier	Marco De Mattei
Santa Maria alla Gruccia	Simone Nocentini
Santa Maria Goretti	Gabriella Monteforte
Santi Antonio e Biagio	Luigi Ruiz
Santissima Annunziata	Mara Rosso
Santo Stefano Prato	Alba Caruso
San Tommaso dei Battuti	Antonio Baldi
Santorso Alto Vicentino	Flavio Sanson
Scientific Institute San Raffaele Hospital	Luisa Roveri
SS. Annunziata	Antonio Manca
SS. Annunziata - Taranto	Angelica Tinelli
SS. Annunziata	Maria De Angelis
SSCosma e Damiano	
ULSS17 - Monselice Hospital	Morena Cadaldini
Università degli Studi di Perugia	Giancarlo Agnelli, Maurizio Paciaroni
University of Genova	Maurizio Balestrino
Vito Fazzi	Leonardo Barbarini
Japan, 75 patients	
National Coordinator:	
To be appointed	
Shonan Kamakura General Hospital	Takahisa Mori

Country and Hospital	Local Coordinator
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Kazakhstan, 108 patients

National Coordinator: Sholpan Nurmanova

GKP na PKHV Gorodskaya bol'nitsa №1	Aygul Kaysarbekova
Regional Hospital Atyrau city	Marta Ismailova
Shymkent city Regional hospital	Nazira Zharkinbekova

Kenya, 0 patients

National Coordinator: Dilraj Sokhi

Kuwait, 0 patients

National Coordinator: Abbas Johar (2020-2021) Athari Salmeeen (2022-)

Kyrgyzstan, 1 479 patients

National Coordinator: Inna Lutsenko

Bishkek City Civil Clinic 1	Inna Lutsenko
Chui Regional Clinic	Aishoola Sultanova

Lebanon, 147 patients

National Coordinator: Souheil Gebeily

Bellevue Medical Center	Souheil Gebeily
The Lebanese Hospital	

Libya, 6 patients

**National Coordinator:
To be appointed**

Benghazi Medical Centre	Husen Abdulrahman
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Lithuania, 4 241 patients

National Coordinator: Aleksandras Viliionskis, Dalius Jatuzis

Hospital of Lithuanian University of Health Sciences Kaunas Clinics	Antanas Vaitkus, Ramune Kavaliauskiene
Klaipeda Seamen's Hospital	Egle Martinkute, Olga Knoknerienė
Klaipeda University Hospital	
Regional Hospital of Panevezys	Linas Masiliūnas
Republican Siauliai Hospital	
Republican Vilnius University Hospital	Aleksandras Viliionskis
Telsiu hospital	Saulius Taroza
Vilnius Uni Hospital	Dalius Jatuzis
Santariskiu clinics	

Malta, 0 patients

National Coordinator: Maria Mallia

Mexico, 1 047 patients

National Coordinator: Fernando Gongora-Rivera, Antonio Arauz Gongora

Hospital Angeles de Queretaro	Fernando Barinagarrementeria
Hospital Civil de Guadalajara	
Hospital General de Culiacan	Jorge Villarreal
Hospital General de Mexico O.D.	Rosalía Vazquez

Country and Hospital	Local Coordinator
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Hospital Regional ISSSTE Monterrey	Francisco Flores
Hospital Universitario UANL	Fernando Gongora-Rivera
Instituto Nacional de Neurología y Neurocirugía	Antonio Arauz Gongora
Instituto Panvascular de Occidente	Luis Murillo-Bonilla
Médica Sur	Carlos Pla, Juan Alberto Nader Kawachi
Regioal de ISSSTE	Carolina León Jiménez
Dr. Valentín Gómez Farías	
San José/Zambrano Helion	Luis Espinosa, Primo Delgado

Moldova, 1 611 patients

National Coordinator: Stanislav Groppa

Institute of Emergency Medicine	Igor Crivorucica
Institute of Neurology and Neurosurgery	Elena Manole

Montenegro, 24 patients

**National Coordinator:
To be appointed**

Clinical Center of Montenegro	Balsa Vujovic
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Morocco, 1 226 patients

National Coordinator: Belahsen Faouzi

Hassan II University Hospital	Belahsen Faouzi
Ibn Rochd University Hospital	

Netherlands, 217 patients

**National Coordinator:
To be appointed**

Atrium Medical Center	
Groningen University Medical Centre	
Sint Anna	
University Hospital Maastricht	

New Zealand, 175 patients

**National Coordinator:
To be appointed**

Christchurch Hospital	
Palmerston North Hospital	Annemarei Ranta
Wellington Regional Hospital	Jeremiah Lanford

Nicaragua, 25 patients

National Coordinator: Jorge Martinez Cerrato

Hospital Metropolitano	Jorge Martinez Cerrato
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Nigeria, 47 patients

National Coordinator: Njideka Okubadejo

Lagos State University Teaching Hospital	Shamsideen Abayomi Ogun
Lagos State University Teaching Hospital	Yomi Ogun

Country and Hospital	Local Coordinator
North Macedonia, 326 patients	
National Coordinator: Anita Arsovska	
Clinical Hospital Tetovo	Danijela Vojtkiv Samoilovska
University Clinic of Neurology	Anita Arsovska
Norway, 2 152 patients	
National Coordinator: Anne Hege Aamodt, Arnstein Tveiten	
Aker University Hospital	
Akershus University Hospital	Ole Morten Ronning
Buskerud Hospital	Karl-Friedrich Amthor
Flekkefjord Sykehus	
Forde Sentralsjukehus	
Haralds plass Diagonale sykehus	
Haugesund Sjukehus	Piotr Burzynski
Haukeland University Hospital	
Helgelandssykehuset Mo i Rana	
Helgelandssykehuset Mosjøen	
Hospital of Asker and Bærum	
Laerdal sjukehus Helse Forde HF	
Molde Hospital	Åse Hagen Morsund
Nordlandssykehuset	
Rikshospitalet, Oslo University Hospital	Anne Hege Aamodt
Ringerike Sykehus	
Sandnessjøen Hospital	
Sentralsjukehuset i Rogaland	Stein Roalsø
St. Olavs Hospital Medicine	
Stord Sjukehus	
Sykehuset i Vestfold	Reidar Kloster
Sykehuset Innlandet HF Kongsvinger	
Sykehuset Innlandet Lillehammer	
Sykehuset Namsos	Stephan Schuler
Sykehuset Østfold	
Sørlandet Sykehus Arendal	
Sørlandet Sykehus Kristiansand	Arnstein Tveiten
Telemark Hospital Skien	
Trondheim University Hospital	
Ullevål University Hospital Neurology	Kristin Gran Olsen
University Hospital North Norway	
Oman, 5 patients	
National Coordinator: Amal Al-Hashmi	
Royal Hospital Muscat	Amal Al-Hashmi

Country and Hospital	Local Coordinator
Pakistan, 414 patients	
National Coordinator: Husnain Hashim	
District Headquarter Hospital Rawalpindi	Lubna Meraj, Shahid Rafiq
Fauji Foundation Hospital	Husnain Hashim
Pakistan Institute of Medical Sciences	Haris Rajput
POF Hospital	Shahid Rafiq, Wasim Uddin
Shifa International Hospital	Sadaf Majid
Panama, 382 patients	
National Coordinator: Nelson Navarro	
Centro Medico Paitilla	Fernando Gracia
Complejo Hospitalario Metropolitano	Arón Benzadón
Dr. Arnulfo Arias/Caja de Seguro Social	
Hospital Dr Luis Chicho Fabrega	Jose Escartin
Hospital Dr. Gustavo Nelson Collado	Jose Escartin
Hospital Nacional	
Pacifica Salud - Hospital Punta Pacifica	Nelson Navarro
San Fernando	
Paraguay, 182 patients	
National Coordinator: Gloria Meza Rojas	
Hospital Central de Policia Rigoberto Caballero	Donoband Melgarejo Fariña
Hospital Central del Instituto de Prevision Social	Aurora Olmedo, Gloria Meza Rojas
Hospital de Clinicas, Facultad de Ciencias Medicas	Alan Flores
Universidad Nacional de Asuncion	
Peru, 2 291 patients	
National Coordinator: Carlos Abanto	
Hospital Alberto Sabogal Sologuren	
Hospital Belen de Trujillo	Isolina Villanueva Pomacóndor
Hospital Il Angamos	Luis Miguel Uchuya Cornejo
Essalud	
Hospital Jorge Reategui Delgado	Jose Cruz
Hospital Nacional Almanzor Aguinaga Asenjo	Luis Sandoval
Hospital Nacional Arzobispo Loayza	Juan Barreto-Montalvo
Hospital Nacional Carlos Alberto Seguin Escobedo	Antero Peralta
Hospital Nacional Edgardo Rebagliati Martins	
Instituto Nacional de Ciencias Neurológicas	Carlos Abanto
Maria Auxiliadora	Marcos Aguilar
Philippines, 157 patients	
National Coordinator: To be appointed	
Community General Hospital of San Pablo City, Inc.	Allan Belen
Davao Regional Medical Center	Dorotheo Jr. Floresca
Las Pinas Doctors Hospital	Celeste Pena
Mt. Carmel Diocesan General Hospital	Grace Joy Arceo
Perpetual Succour Hospital	Jarungchai Vatanagul

Country and Hospital	Local Coordinator
Poland, 9 909 patients	
National Coordinator: Michał Karlinski, Adam Kobayashi, Anna Członkowska	
107th Military Hospital with Polyclinic	Marcin Rogoziewicz
Biziel's hospital	Violetta Palacz Duda, Violetta Palacz-Duda
Central University Hospital	
Clinical Hospital Nr 4 Lublinie	Piotr Luchowski
Copernicus Hospital	Bożena Adamkiewicz
CSK, MSWiA	Małgorzata Dorobek
Hospital in Radzyń Podlaski	Daniel Bzowski
Hospital of Florian Ceynowy in Wejherowo	Agnieszka Wysocka
Institute of Psychiatry and Neurology	
Institute of Psychiatry and Neurology	Maciej Nowak, Adam Kobayashi, Anna Członkowska, Michał Karlinski
Koscierzyna Hospital	
Marciniak Memorial Hospital	
Mazowiecki Szpital Wojewódzki	Agata Włodek
Medical University of Gdansk	
Medical University of Warsaw	
Military Medical Institute	Jacek Staszewski
Pomorskie Centrum Traumatologii im.M.Kopernika	Waldemar Fryze
Powiat Hospital	Artur Węsek
Poznan - Province Hospital	
Radomsko Szpital Powiatowy	Jacek Hubner
Samodzielny Publiczny Szpital Wojewódzki im. Papieża Jana Pawła II	Kajetan Mazurek
Specialist Hospital	Małgorzata Wisniewska
Specialist Hospital in Jaslo	Stanisław Kosiek
Specialized Hospital	Anna Smółka
SPSK im. Orłowskiego	Witold Palasik
SPZOZ Działdowo	Marek Zalisz
SPZOZ Lubartów	Mirosław Miazga
SPZZOZ Sandomierz	Piotr Sobolewski
St. Adalbert Hospital, Copernicus	Wiesława Holub-Kucharska
St. Queen Jadwiga Clinical District Hospital No. 2 in Rzeszów	Rafał Kaczorowski
Szpital Kolejowy SP ZOZ	
Szpital Kolejowy w Pruszkowie Sp. z o.o.	Aleksandra Nabialek
Szpital Krosno	Rafał Jucha
Szpital Powiatowy Skarżysko-Kamienna	Jan Stoiński
Szpital Powiatowy w Kraśniku	Hanna Basista
Szpital Powiatowy w Sedziszowie Małopolskim	Marcin Zieba
Szpital Powiatowy Zespół Opieki Zdrowotnej w Przeworsku	Anna Kozak-Sykała

Country and Hospital	Local Coordinator
Szpital Specjalistyczny im. H. Klimontowicza w Gorlicach	Jarosław Borowicz
Szpital Specjalistyczny w Końskich	Małgorzata Fudala
Szpital Wolski	Arleta Kuczyńska-Zardzewiały
Szpital Zachodni im. Św Jana Pawła II	Marta Bilik
Univeristy Hospital No 1 Bydgoszcz A. Jurasza	
Uniwersytecki Szpital Kliniczny	Alina Kułakowska
Uppersilesian Medical Centre	
Wojewódzki Specjalistyczny Zespoł Opieki	
Wojewódzki Specjalistyczny Zespół Neuropsychiatryczny	
Wojewódzki Szpital Specjalistyczny Lublin	Monika Pędracka
Wojewódzki Szpital Specjalistyczny Olsztyn	
Wojewódzki Szpital Specjalistyczny Siedlce	Paweł Kwiatkowski
Wojewódzki Szpital Zespolony w Koninie	Adrian Filipczak
Portugal, 6 729 patients	
National Coordinator: Teresa Pinho e Melo	
Centro Hospitalar de Gaia	Luis Miguel Galo Veloso
Centro Hospitalar de Setubal	Rui Guerreiro
Centro Hospitalar de Tras-os-montes e Alto Douro	Andreia Veiga
Centro Hospitalar Lisboa Ocidental	Miguel Viana Baptista
Dr. Nélío Mendonça Funchal	Rafael Freitas
Hospitais da Universidade de Coimbra	Cristina Machado
Hospital de Braga	Carla Ferreira
Hospital de Egas Moniz	
Hospital de Faro	Silvia Castro
Hospital de São Sebastião	José Roriz, José Mário Roriz
Hospital Garcia de Orta	Miguel Rodrigues
Hospital Geral do Centro Hospitalar e Universitário de Coimbra	José Grilo Gonçalves
Hospital Pedro Hispano, Unidade Local de Saúde de Matosinhos	Vitor Tedim Cruz
Hospital S Bernardo	
Hospital Santo António	Rui Felgueiras
Hospital São João	Elsa Azevedo
Hospital Sao Jose - CHLC	Ana Paiva Nunes
HPP Hospital de Cascais - Dr. José de Almeida	Cátia Carmona
Santa Maria	Teresa Pinho e Melo

Quatar, 13 791 patients**National Coordinator: Naveed Akhtar**

Hamad General Hospital	Naveed Akhtar
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Country and Hospital	Local Coordinator
Romania, 60 patients	
National Coordinator: Dafin Fior Muresanu	
Clinical Emergency County Hospital Oradea	Monica Sabau
County Emergency Hospital Timisoara	Dragos Catalin Jianu
Emergency County Hospital	Adina Dora Stan, Dafin Fior Muresanu
Emergency Hospital Dr. N. Oblu Lasi	Dan Iulia Cuciureanu
Mures County Clinical Emergency Hospital	Rodica Bălașa

Russian Federation, 4 812 patients

National Coordinator: Tatiana Kharitonova	
Alexandrovskaya hospital	Vitaliy Novikov
Buz ur "1 RCB MZ UR"	Nataliya Komissarova
BUZOO "OKB"	Anton Bort
Citi Clinical Hospital #20 named after A.K. Ermishancev	Ketevana Meshkova
City Clinical Hospital No 67 named L.A.Vorohobova Moscow Health Department	Mark Loskutnikov
City Clinical Hospital No.20 DM	Artem Tolmachev
I.V.Davidovsky Moscow City Hospital	Alexandra Botsina
ICDC	Timur Demin
Krasnodar City Clinical Emergency Hospital	Nadezhda Ermachenko
Krasnoyarsk Regional Hospital	Nataliya Halo
Mariinsky Hospital	
Medical Military Academy	Alexey Polushin, Igor Voznjouk
MMBU GKB№ 1 Pirogov	Tatiana Lokshtanova
Murmansk Regional Clinical Hospital P.A.Bajadin	Artem Timofeev
Naberezhnye Chelny BSMP Tatarstan	Galina Lukyanova
National Pirogov Centre	Oleg Vinogradov
Nikolaevskaya Hospital	Liudmila Roshkovskaya
Novokuznetsk Municipal Clinical Hospital #1	Sergey Borzykin
Novosibirsk City Clinical Hospital No1	Dmitriy Layvin
NRCERM EMERCOM	Irina Lomova
Orenburg City Clinical Hospital	Vadim Ershov
Regional Clinical Hospital 2 Tyumen	Antonina Grigorovskaya
Research Center of Neurology of Russian Academy of Medical Sciences	Maxim Domashenko
Rostov District Clinical Hospital	Aleksey Hripun
Russian State Medical University	Nikolay Shamalov
SPb GBUZ Gorodskaya bolnitsa No 26	Aleksei Shmonin
St-Petersburg Elizavetinskaya Hospital	Tatyana Sergeeva
St. Joasaph Belgorod Regional Clinical Hospital	Yury Lykov
State Healthcare Institution of Kaluga Region «City Clinical Hospital #2» "Sosnovaya roscha"	Maksim Holopov
Sverdlovsk Clinical Regional Hospital #1	Elena Prazdnichkova
Vladivostok Hospital №1	Evgeny Shestopalov

Country and Hospital	Local Coordinator
Saudi Arabia, 843 patients	
National Coordinator: Adel Alhazzani	
King Abdulaziz hospital	Abdulrahman Almalki
King Abdulaziz University	Mohammed Almekhlafi
king Fahad hospital of the University	Aishah Albakr
King Fahad Medical City	Nof Mansour
King Fahad Specialist Hospital	Farah Aleisa
Qatif Central Hospital	Alaa Almajed

Serbia, 378 patients

National Coordinator: Dejana Jovanovic	
Clinical Centre of Vojvodina	Zeljko Zivanovic
Neurology Clinic, Clinical Center of Serbia	Predrag Stanarcevic, Dejana Jovanovic

Singapore, 325 patients

National Coordinator: To be appointed	
National Neuroscience Institute-TTSH campus	Rajinder Singh
National University Hospital	
Singapore General Hospital	

Slovakia, 7 172 patients

National Coordinator: Zuzana Gdovinova	
CINRE	Jana Thurzova
Faculty Hospital F.D. Roosevelt, Banska Bystrica	Dusan Kanat
Faculty Hospital J.A.Reimana	Adrian Rynik
Faculty Hospital Nitra	Miroslav Brozman
Faculty Hospital Trnava	Georgi Krastev
Fakultna Nemocnica Trencin	Marek Bojda
FNSP Nove Zamky	Adriana Horvathova, Igor Polak
FNSP Skalica a.s.	Patricia Palenčárová
Forlife n.o.	Eva Hanáčková, Katarina Pasztoova
Hospital and Policlinics Spisska Nova Ves a.s.	Miloslav Dvorak
Hospital Svidnik	Anna Kravecova
Liptovská Nemocnica s Poliklinikou MUDr.Ivana Stodolu	Anna Jarošová
Ľubovnianska Nemocnica n.o.	Lucia Rokytová
National Institute of Cardiovascular Diseases	Martin Kucharik
Nemocnica Košice-Šaca a.s	Eva Rozpravkova
Nemocnica A. Lena, Humenné	Danica Gossanyiova
Nemocnica Poprad a.s.	Ľubica Snopeková
Nemocnica s Poliklinikou Dunajská Streda	Marta Feketeová
Nemocnica s Poliklinikou Povazska Bystrica	Igor Pruzinec
Nemocnica s Poliklinikou Svateho Lukasa Galanta	Oto Petrik
NsP Brezno n.o.	Ivan Droppa
NsP Stefana Kukuru v Michalovciach n o	Martina Kolibášová

Country and Hospital	Local Coordinator
NsP Sv. Jakuba, Bardejov	Pavol Kantor
NsP sv. Barbory Rožňava	Igor Balušík
Svet Zdravia, a.s. - Všeobecná Nemocnica Rimavska Sobota	Martin Bachnak
University Hospital in Martin	Vladimir Nosal
University Hospital of Bratislava	Gabriela Timarova, Matej Nový
University Hospital of L. Pasteur	Norbert Leško, Zuzana Gdovinova
UVN SNP Ružomberok	Oto Hanus
VNsP Levoča	Ladislav Gurčík
Vranovska Nemocnica, n.o.	Katarína Potocká

Slovenia, 1 752 patients

National Coordinator: Viktor Savigelj

General Hospital Celje	Marija Sostaric Podlesnik
General Hospital Novo mesto	
Murska Sobota General Hospital	
SB Jesenice	Tomaž Šavli
SB Nova Gorica	
Splosna Bolnisnica Novo Mesto	Matej Kolenc
University Clinic	Marija Menih
University Medical Center Ljubljana	Senta Frol, Viktor Savigelj

South Korea, 665 patients

National Coordinator: Joung-Ho Rha

Ajou University Hospital	
Asan Medical Center	
Bundang Seoul National Uni Hospital	
Cheju National University Hospital	
Chonbuk National University Hospital	
Chonnam National University Hospital	
Chungnam National University Hospital	
Dong-A University Hospital	
Dongguk Uni International Hospital	
Dongsan Medical Center Keiymung Uni	
Eulji General Hospital	
Eulji University Hospital	
Gil Medical Center Gachon University	
Hallym University Sacred Heart Hospital	
Ilsan Paik Hospital	
Inha University Hospital	Joung-Ho Rha
Kangbuk Samsung Hospital	
Konkuk University Hospital	
Nat Health Insurance Corp Ilsan Hospital	
Paik Hospital Pusan	
Samsung Medical Center	
Seoul National Uni Boramae Hospital	
Seoul National University Hospital	
Soonchunhyang University Hospital	
Ulsan University Hospital	
Wonju Christian Hospital	

Country and Hospital	Local Coordinator
Yeungnam University Medical Center	
Yonsei University College of Medicine	

Spain, 5 120 patients

National Coordinator: Jose Egido

Basurto	M. Mar Freijo
Clinica Universitaria de Navarra	
Hospital General de Castellón	
Hospital Clínico Universitario	
Hospital Clínico Universitario Dr Lozano Blesa	
Hospital de Bellvitge	
Hospital de Cruces	
Hospital de Donostia	
Hospital de la Santa Cruz y San Pablo	
Hospital de Leon	
Hospital de Navarra	
Hospital de Torrecárdenas	
Hospital del Mar	
Hospital Galdakano	
Hospital General de Albacete	Tomás Segura
Hospital General Doctor Negrín	
Hospital General La Mancha Centro	
Hospital General Universitario de Alicante	Ana Pampliega
Hospital General Universitario-Valencia	
Hospital General Yagüe	
Hospital Gregorio Marañón	
Hospital Insular de Gran Canaria	
Hospital Meixoeiro (Vigo)	
Hospital Miguel Servet	
Hospital Nuestra Señora del Rosario	Francisco Gilo
Hospital Parc Taulí	
Hospital Ramón y Cajal	
Hospital Sagrat Cor	
Hospital San Carlos	Jose Egido
Hospital Son Dureta	
Hospital Txagorritxu	
Hospital Univ Central de Asturias	
Hospital Universitari Germans Trias i Pujol	Laura Dorado
Hospital Universitari Girona	
Hospital Universitario de Canarias	
Hospital Universitario de la Princesa	
Hospital Universitario La Fe	Lago Aida
Hospital Universitario La Paz	Exuperio Díez-Tejedor
Hospital Universitario Principe de Asturias	
Hospital Universitario Vall d Hebron	
Hospital Universitario Virgen del Rocío	Francisco Moniche
Hospital Universitario Virgen del Macarena	Miguel Angel Gamero

Country and Hospital	Local Coordinator
Hospital Valme	
Hospital Virgen de la Salud	
Nuestra Señora de la Candelaria	
University Hospital Doce de Octubre	
Virgen de las Nieves	Jose F. Maestre-Moreno

Sri Lanka, 2 235 patients

National Coordinator:
Udaya Ranawaka

Colombo North Teaching Hospital, Ragama	Udaya Ranawaka
Sri Jayewardenepura General Hospital	Harsha Gunasekara

Sudan, 0 patients

National Coordinator: Tajeldinn Helal

Sweden, 15 493 patients

National Coordinator: Michael Mazya

Alingsås lasarett	
Arvika Sjukhus	
Blekingesjukhuset	
Capio St Görans sjukhus	Gabriella Strandberg
Centrallasarettet Västerås	
Danderyd Hospital	
Falu lasarett	
Gällivare sjukhus	
Gävle-Sandvikenssjukhus	
Helsingborgs Lasarett	
Karlskoga Hospital	
Karlstad Centralsjukhuset	
Karolinska University Hospital-Solna	Tiago Moreira, Michael Mazya
Karolinska University Sjukhuset-Huddinge	
Kiruna sjukhus	
Kristianstad Central-sjukhuset	
Kullbergsska sjukhuset	Yeasmin Tahera
Kungälv sjukhus	
Kärnsjukhuset Skövde	
Köping Hospital	Jan Saaf
Lasarettet i Enköping	Mikael Wiklund
Lasarettet i Motala	
Lasarettet i Ystad	
Lidköping Hospital	
Lindesbergs lasarett	
Lund - Skånes Universitetssjukhus	Gunnar Andsberg
Lycksele	
Länssjukhuset Halmstad	
Länssjukhuset Kalmar	
Malmö - Skånes Universitetssjukhus	Gunnar Andsberg
Malmö Allmänna Sjukhus	
Mora Lasarett	
Mälarsjukhuset Eskilstuna	
Norrköping lasarett	
Norrlands universitetssjukhus	

Country and Hospital	Local Coordinator
Norrköping sjukhus	
Nyköpings lasarett	Jonas Lindeberg
Oskarshamn Sjukhus	Elmar Keppel
Piteå Älvdals sjukhus	
Ryhovs Länssjukhus	
Sahlgrenska Universitetssjukhus	Jan-Erik Karlsson
Sjukhuset i Hässleholm	
Skellefteå Lasarett	
Skene Hospital	
Sollefteå sjukhus	
Södersjukhuset	Mihaela Oana Romanitan
Södertälje sjukhus	
Södra Älvsborgs Sjukhus	
Torsby sjukhus	
Trelleborgs sjukhus	
Uddevalla sjukhus	
Universitetssjukhuset Linköping	
Uppsala Akademiska sjukhus	
Varbergs sjukhus	
Visby Lasarett	
Västerviks sjukhus	
Ängelholms Sjukhus	
Örebro sjukhus	

Switzerland, 57 patients

National Coordinator:

To be appointed GHOL	Olivier Bill
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Thailand, 915 patients

National Coordinator:

To be appointed King Chulalongkorn Memorial Hospital	Aurauma Chutinet
Phyathai 1 Hospital	Surat Boonyakarnkul

Tunisia, 3 192 patients

National Coordinator: Samia Ben Sassi

Institut National Mongi ben Hamida de Neurologie	Samia Ben Sassi
Polyclinique Taoufik	Souheil Marrak

Türkiye, 4 631 patients

National Coordinator:

Atilla Özcan Özdemir VM Medicalpark Pendik Hospital	Ahmet Yabalak
Antalya Education and Research Hospital	
Avrupa Hastanesi Neurology Department	
Bezmialem Vakıf University Medicine Faculty Hospital	Talip Asil
Dokuz Eylül Medical Faculty	
Erciyes University Medical Faculty Hosp	
Eskişehir Osmangazi University Medical Faculty	Atilla Ozcan Ozdemir
Fethiye Dilek Orken	

Country and Hospital	Local Coordinator
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Florence Nightingale	Fethiye Dilek Orken
Gop Medical Park Hospital	Aysenur Onalan
Hacettepe University Hospital	Mehmet Topcuoglu
Inonu University, Turgut Ozal Medical Center	Yuksel Kablan
Istanbul Aydin University Florya Medicalpark Hospital	
Istanbul Medical Faculty Hospital	Nilufer Yesilot
Istanbul University Cerrahpasa School of Medicine	Derya Uğurlu Uludüz
İstinye University Liv Hospital	Yakup Krespi
Memorial Hizmet hospital	Bahar Koyuncu
Trakya University Faculty of Medicine	
University of Health Sciences, Bursa Yuksek Ihtisas Training and Research Hospital, Bursa, Türkiye	Aygul Gunes
Yeditepe University Hospital	
Özel Ege Saglik Hastanesi	

Ukraine 177 patients

National Coordinator:

Sergii Moskovko

Feofania	Gennadiy Pasichnyk
Ivano-Frankivsk Regional Clinical Hospital	Marta Grynovska
Kyiv Region Clinical Hospital	Nataliia Chemer
Municipal City Clinical Hospital of the Emergency Medical Care	
Odessa City Hospital	Serhii Fernandez de Rives
Vinnitsa regional Psychoneurological hospital name academician of O.I. Yshenko	Sergii Moskovko

United Arab Emirates, 1 969 patients

National Coordinator: Maria Khan

Mafrag Hospital	Udugama Goonetilleke
Mediclinic City Hospital	Derk Krieger
Rashid Hospital	Maria Khan
Sheikh Shakhboub Medical City	Josef Alawneh
Shiekh Khalifa Medical City	

United Kingdom, 29 873 patients

National Coordinator:

Mary Joan Macleod, Christine Roffe

Associate National Coordinator:

Azmil Abdul-Rahim

Regional Coordinator: Belinda Manak, Angela Welch, Keith Muir, Tracey Baird, Matthew Walters

Aberdeen Royal Infirmary	Mary Joan Macleod
Addenbrookes Hospital	
Aintree University Hospital	
Airedale General Hospital	
Altnagelvin Area Hospital	John Charles
Antrim Area Hospital	
Arrowe Park Hospital	
Ashford and St Peters NHS Trust	Bhaskar Mandal
Ayr Hospital	

Country and Hospital	Local Coordinator
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Bedford Hospital	
Barnsley Hospital NHS Foundation Trust	
Basildon Hospital	Udayaraj Umasankar
Bedford Hospital	
Belfast HSC Trust	
Birmingham Heartlands Hospital	
Blackpool Victoria Hospital	
Bradford Royal Infirmary	Chris Patterson
Bristol Royal Infirmary	Peter Murphy
Bronglais	Claire West
Broomfield Hospital	George Zachariah
Buckinghamshire Hospitals NHS Trust	
Calderdale and Huddersfield NHS Foundation Trust	Anand Nair
Causeway Hospital	
Charing Cross Hospital	
City Hospital Campus NUH NHS Trust	
City Hospital, Birmingham	Shahid Kausar
Colchester Hospital University NHS Foundation Trust	
Conquest Hospital	
Countess of Chester	Kausik Chatterjee
Coventry & Warwickshire University Hosp	
Craigavon Area Hospital	
Cumberland Infirmary	David Paul Davies
Daisy Hill Hospital	
Darent Valley Hospital	Senussi Hussein
Diana Princess of Wales Hospital	
Doncaster Royal Infirmary	
Dorset County Hospital	Harald Proschel
East and North Hertfordshire NHS Trust Lister	
East Surrey Hospital	
Edinburgh Western General	
Epsom General Hospital	
Erne Hospital/SWAH	
Fairfield General Hospital	
Forth Valley Royal Hospital	Anthony Byrne
Glangwili General Hospital	
Glasgow Royal Infirmary	
Gloucestershire Royal Hospital	Dipankar Dutta
Harrogate District Hospital	Sean Brotheridge
Hope Hospital, Manchester	
Hull Royal Infirmary	Ahmed Abdul-Hamid
Imperial College Healthcare NHS Trust	Arindam Kar, Kyriakos Lobotesis
Ipswich Hospital NHS Trust	Peter Phillips
James Cook University Hospital	Gavin Young
James Paget University Hospital	
John Radcliffe Hospital	Alastair Buchan
Kent and Canterbury Hospital	Ilse Burger
King s College Hospital NHS Trust	
Leeds General Infirmary	Peter Wanklyn

Country and Hospital	Local Coordinator
Lincoln County Hospital	Ibrahim Wahishi
Luton & Dunstable NHSFT Hospital	Lakshmanan Sekaran
Macclesfield Districe General hospital	Moe Sein
Manchester Royal Infirmary	
Mater Hospital	
Mayday University Hospital	
Medical Specialist Group	Steve Evans
Medway Maritime Hospital	
Mid Yorkshire Hospitals NHS Trust	Michael Carpenter
Morrison	Manju Krishnan
Musgrove Park Hospital	Robert Whiting
National Hospital for Neurology	
Nevill Hall Hospital	
Newcastle upon Tyne Hospitals NHS Foundation Trust	Anand Dixit
Ninewells Hospital Dundee	
Nobles Hospital	
Norfolk and Norwich University Hospital	Nisal Gange
North Cheshire Hospitals Trust	
North Hampshire Hospital	Elio Giallombardo
North Tyneside General Hospital	
Northampton General Hospital	
Northwick Park Hospital	
Peterborough City Hospital	Peter Owusu-Agyei
Pilgrim Hospital	
Poole Hospital	Suzanne Ragab
Prince Philip Hospital	Granville Morris
Princess of Wales hospital	Harish Bhat
Princess Royal Hospital	Khalid Ali
Princess Royal Hospital Haywards Heath	Khalid Ali
QEQM Hospital	George Thomas
Queen Alexandra Hospital	
Queen Elizabeth Hospital Birmingham	Don Sims
Queen Elizabeth Hospital - Gateshead	
Queen s Medical Centre	
Queens Hospital Burton Foundation NHS Trust	
Rotherham General Hospital	Jeanette Harris
Royal Blackburn Hospital	Nicholas Roberts
Royal Bournemouth and Christchurch Hospital	Damian Jenkinson
Royal Cornwall Hospital	Katja Adie
Royal Derby Hospital	
Royal Devon & Exeter Hospital	
Royal Free Hampstead NHS Trust	
Royal Glamorgan Hospital	
Royal Gwent Hospital	
Royal Hallamshire Hospital	Catrin Blank
Royal Hampshire County Hospital	Nigel Smyth
Royal Liverpool & Broadgreen University Hospital (NHS) Trust	
Royal London Hospital	

Country and Hospital	Local Coordinator
Royal Preston Hospital	Hedley Emsley
Royal Surrey County Hospital	Kath Pasco
Royal Sussex County Hospital	Ingrid Kane
Royal United Hospital Bath	
Russells Hall Hospital	
Salford Royal Foundation Trust	Jane Wainwright
Salisbury District Hospital	David Walters
Sandwell and West Birmingham NHS Trust	
Scarborough General Hospital	
Scunthorpe General Hospital	Amit Banerjee
Shrewsbury and Telford Hospital Trust	
South Glasgow University Hospital – QEUH	Angela Welch, Azmil Abdul-Rahim, Belinda Manak, Keith Muir, Matthew Walters, Tracey Baird
South Tyneside NHS Foundation Trust	
Southampton General Hospital	
Southend Hospital	
Southern General Hospital	
Southmead Hospital	Philip Clatworthy
Southport and Ormskirk NHS Trust	
St Helens and Knowsley Teaching Hospita	
St John's Hospital	
St Thomas Hospital	
St. George's Hospital	Anthony Pereira, Lique Zhang
St. Richard's Hospital	
Stockport NHS Foundation Trust	Shivakumar Krishnamoorthy
Sunderland Royal Hospital	Richard O'Brien
The Great Western Hopsital NHS Foundation Trust	Shivaprasad Arekalludoddi Siddegowda
The Maidstone Hospital	Christine Wright
The Princess Alexandra Hospital	
The Queen Elizabeth Hospital Kings Lynn NHS TRUST	
The Royal Wolverhampton Hospital Trust	
Torbay	
Tunbridge Wells Hospital in Pembury	Mahendra Pattanshetti
Ulster Hospital Belfast	Kevin Dynan
University Hospital Coventry	
University Hospital North Staffordshire	Christine Roffe
University Hospital of North Durham	
University Hospital of Wales	Thomas Hughes
University Hospital Southampton	Nicolas Weir
University Hospitals Leicester NHS Trust	David Eveson, Debra Magorian
University Hospitals of North Tees & Hartlepool	
University Hospitals Plymouth NHS Trust	Azlisham Mohd Nor
Victoria Hospital Kirkcaldy	Vera Cvoro
Walsall Manor Hospital	
Walton Centre NHS Foundation Trust	Alakendu Sekhar
Warrington and Halton Hospitals	

Country and Hospital	Local Coordinator
Warrington and Halton Hospitals	
Watford General Hospital	David Collas
West Cumberland Hospital	Enoch Orugun
Western Infirmary	Kennedy Lees
William Harvey Hospital	David Hargroves
Wishaw General Hospital	
Worcestershire Acute Hospital	
Worthing	
Wrexham Maelor Hospital	
Yeovil District Hospital	Khalid Rashed
York Hospital	
Uruguay, 270 patients	
National Coordinator: Claudia Camejo	
Hospital de Clínicas	Andrés Gaye Saavedra, Claudia Camejo
Medica Uuguaya	Roberto Crosa
Venezuela, 2 060 patients	
National Coordinator: To be appointed	
Clinica La Piramide	Negman Alvarado
Hospital Univ de Maracaibo	Digna Parra
Hospital Universitario de Caracas	
Instituto Autonomo Hospital Universitario de Los Andes	Gabriela Molina

Country and Hospital	Local Coordinator
Vietnam, 503 patients	
National Coordinator: Luc Tran Viet	
108 Military Central Hospital Stroke Unit	Ngoc Nguyen Hoang
Bach Mai Emergency	Anh Nguyen Dat
Bach Mai Neurology	Thinh Le Van
Benh vien da khoa huru nghi Viet Tiep	Huyen Nguyen Thi Thu
Benh vien Thong Nhat	Thanh Le Dinh
Benh vien Trung Uong Hue	Nguyen Tran Thua
Cho Ray Hospital	
General Friendship Hospital of Nghe An	Thanh Long Nguyen
HCMC Univesity Medical Center	Thang Ba Nguyen
Military Hospital 103	
National Hospital of Geriatry	Luc Tran Viet
Nhan Dan Gia Dinh	
Thai Nguyen general hospital	Tuan Tran Van
Thanh Nhan	
Thanhhoa General Hospital	Sam Nguyenhoanh
The People ' 115 hospital	Thang Huy Nguyen
Trung Vuong	