



**World Stroke
Organization**



**Annual
Report
2022**

**World Stroke
Organization**

one voice



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Letter from the President

Marc Fisher, President until October 2022

2022
was a highly successful year for the WSO. Activities have returned to how they were before the global COVID-19 pandemic, to some extent.

2022 was a highly successful year for the WSO. Activities have returned to how they were before the global COVID-19 pandemic, to some extent. Carrying forward the benefits of virtual connection that were established during the pandemic, a hybrid World Stroke Congress was held in Singapore at the end of October. We welcomed a total of 4,444 participants, 2,420 virtual attendees and 2,024 in-person attendees, and a large number of important scientific presentations. The ability to see colleagues for the first time in several years was appreciated by those attending in-person. Alongside the opportunities to connect with the global and local community for World Stroke Day the ability to meet created visible energy in Singapore as well as many other locations around the world where the campaign to raise awareness of stroke symptoms and the importance of timely treatment reached billions.



Marc Fisher

The first WSO Future Leader's cohort met in person in Dubai before receiving their graduation certificates in Singapore. A second cohort for the future leader's program has been recruited and will meet in-person in Germany in the first half of 2023. This unique program provides participants with opportunities to connect with other emerging leaders and also prepares them for significant responsibilities in their regions as well as as in WSO, a recent graduate has already been welcomed to the WSO Board.

Under the leadership of Sheila Martins, efforts to advance the quality of stroke care were advanced through the stroke center certification program which has supported many institutions across Latin America to improve their stroke care systems. The program is now expanding to India, with further opportunities for expansion planned for the years to come.

The World Stroke Academy, under the leadership of Gustavo Saposnik, continues to broaden the provision of quality online stroke education and is building engagement through highly active social media outreach. Last but not least, WSO held a board election and a large number of new board members and WSO officers were elected. I would like to congratulate the following winners: Craig Anderson (Vice President), Valeria Caso (Treasurer), Deidre De Silva (Secretary), Gustavo Saposnik and Gisele Sampaio (Executive Committee Member at Large).

It has been an honor and a privilege to serve as the president of the WSO for the past two years. I leave the organization in the able hands of Sheila Martins who assumed the presidency in October. I am sure she will do a great job and help the WSO to continue to grow and develop new initiatives.

Finally, I would like to thank our colleagues, partners, members and sponsors for their contribution to this work and for your continuous support to WSO, which takes us closer to our mission of lives free from stroke.

A handwritten signature in black ink that reads "Marc Fisher". The signature is fluid and cursive, written on a light-colored background.

Sheila Martins, President as from October 2022



Sheila Martins

As the first President coming from a Middle-Income Country, I understand very well the huge economic and social disparities that affect people living in LMICs and am committed to achieving access to stroke care and more equitable outcomes for patients.

My term as president of the WSO started on October 28th 2022 during the World Stroke Congress in Singapore. Middle-income countries account for 80% of the world's population. As the first President coming from a Middle-Income Country, I understand very well the huge economic and social disparities that affect people living in LMICs and am committed to achieving access to stroke care and more equitable outcomes for patients. I have extensive experience in building stroke systems of care in underserved areas in several countries, and I have seen that it is possible, by working together with governments and specialists, to overcome the gaps and implement effective stroke programs globally. As the first woman president of WSO, I want to give more opportunities to female talent, starting with 50% of our executive board being composed by women for the first time. It will be an honor to lead this important organization with the possibility to save and change millions of lives worldwide.

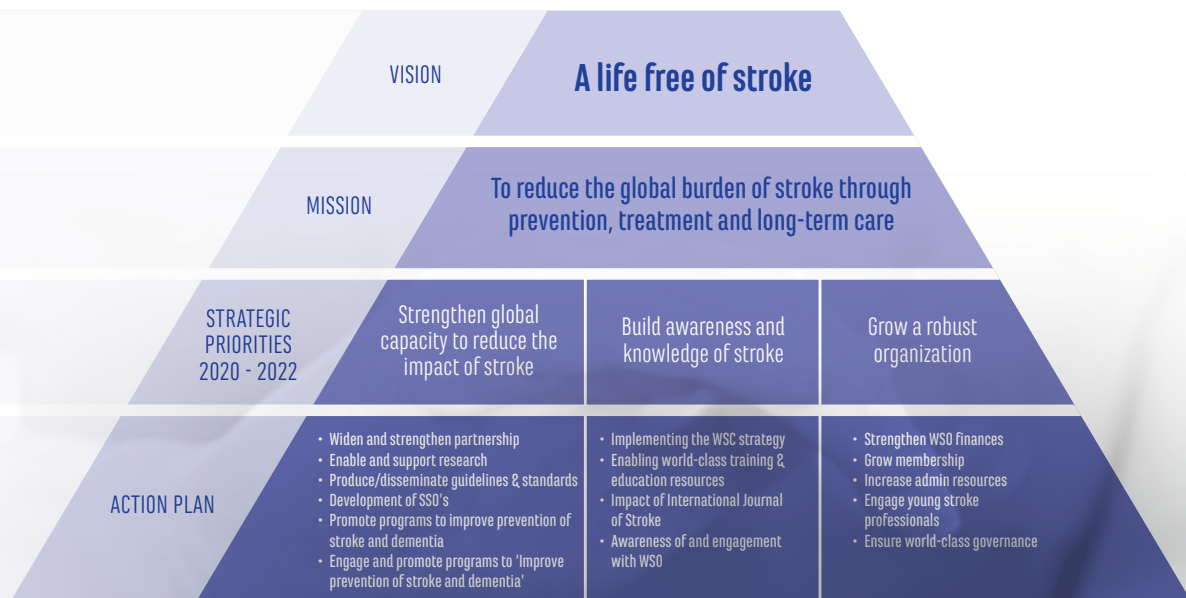
A handwritten signature in black ink that reads "S Martins".

one voice

Our Vision, Mission, and Strategic Priorities

The World Stroke Organization (WSO)

is recognized as the lead global organization for stroke by the World Health Organization (WHO). It was established in October 2006 through a merger of the International Stroke Society and the World Stroke Federation with the purpose of coordinating efforts and constituting One World Voice for Stroke. The aims of WSO are to:



The aims of WSO are to:

Foster the best standards of practice in stroke care

Increase public awareness of stroke

Influence policies for prevention of stroke and vascular dementia, improve health services

Provide education through collaboration with public and private organizations

Facilitate stroke research

Advocate and foster systems for long-term support of stroke survivors and their families

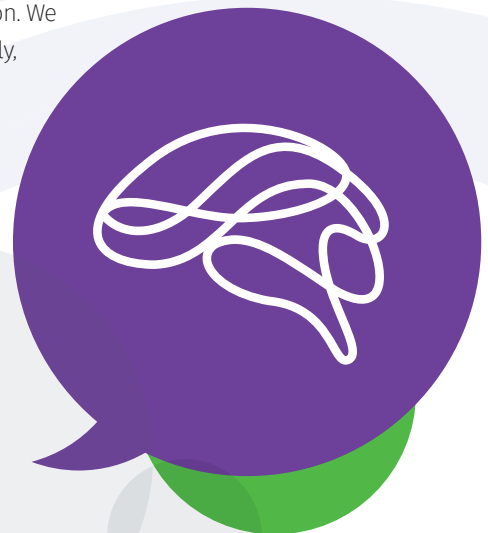
Developing our Strategy for the Future

In October WSO leadership conducted a review of our 2018-22 organizational strategy and identified significant progress in many areas of stroke advocacy, education and capacity strengthening. We are pleased to report that we have made significant progress in strengthening our leadership role in global stroke advocacy and campaigning and continued to engage and influence activities promoting stroke prevention, treatment, after care, and rehabilitation. By encouraging the participation of our members in WHO and non-communicable disease (NCD) agendas, we have increased the profile of stroke within the NCD agenda and amplified the voice of stroke survivors in global NCD discourse. We continued to strengthen the partnership with the Global Coalition for Circulatory Health through various joint activities to promote the WSO vision and mission. We engaged and assisted programs to improve stroke prevention, including e-Health, training for community health workers, and polypill use, and programs increasing acute stroke care and the development of stroke units, after care and rehabilitation. In addition, we successfully promoted activities contributing to the availability and affordability of drugs for stroke prevention and treatment, as well as all activities that enable universal health coverage for stroke. WSO has been active in participating in key global and regional policy meetings and health initiatives to advance the aims of our organization. We expanded the network of stroke support organizations (SSOs) globally, particularly in LMICs to fight the consequences and risks of stroke in all regions. We are delighted to find that the number of SSO members of WSO has increased from 65 in 2020 to 80 in 2022.

We are pleased to report that we have made significant progress in strengthening our leadership role in global stroke advocacy and campaigning and continues to engage and influence activities promoting stroke prevention, treatment, after care, and rehabilitation.

Despite this progress, WSO still faces several significant challenges. More specifically, we are looking forward to improving our engagement with regional organizations to amplify the voice of lived experience and promote evidence-based stroke care globally. By developing clear measures of impact for our programs and reduce reliance on industry funding, we will proactively adapt to financial uncertainties at all levels of health systems, including our members and sponsors. Looking ahead to our strategic priorities towards 2026, our Executive Committee and board members came together in Singapore for a strategy workshop on October 26, 2022. WSO's new strategy goals are expected to be shared with our members and partners in May 2023.

one voice



A Global Voice for Stroke -

Influencing Global Policy through Advocacy and Awareness

Developing Global Policy

In order to assist with the coordination of policy advocacy efforts of our members, the Global Policy Committee, chaired by Michael Brainin and Valery Feigin, has developed and published 'A Life Free From Stroke - WSOs Global Policy Agenda'. The publication identifies a series of advocacy priorities and policy recommendations to address key barriers to progress on stroke prevention, acute care, rehabilitation, and support. The new publication will assist members' advocacy efforts as they interact with local and federal decision-makers in order to enact evidence-based stroke policy interventions.

Stroke the second-leading cause of death in the world



101M
people
are living with
the stroke
aftermath

12.2M
new strokes
each year

90%
of all strokes
are linked to
10
modifiable
risk factors

143M
healthy years of
life lost to stroke
each year

1 in 4
people over
age 25 will
experience
stroke in their
lifetime

WSO advocacy priorities

WSO has defined five key advocacy priorities that span across prevention, detection, acute care and rehabilitation. These advocacy priorities support the realization of WSO's strategic objectives.



The global policy committee also convened two well attended webinars on the following topics:

Digital solutions in stroke prevention

Co-Chairs: J. Pandian and V. Feigin
Presenters: V. Feigin, J Pandian, M. Owolabi and S. Martins

404 attendees

Translating evidence into practice: how to effectively implement best practice stroke care

Co-Chairs: A. Ranta and G. Ford
Presenters: Gary Ford, Anna Ranta, Epifania Collantes and Noor Azah Abd Aziz

200 attendees

During 2022, WSO has participated in several global and regional meetings and health initiatives to advance the aims of our organization.



WHO Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders

The WHO Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders 2022–2031 (IGAP) was adopted at the WHO's World Health Assembly on May 27, 2022.

(https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_10Add4-en.pdf)

The adoption of the IGAP is the result of several years of advocacy and consultations with the World Federation of Neurology. It was initiated by the epilepsy societies and evolved to include the entire spectrum of neurological disorders, including stroke.

Structured around five strategic objectives, ten targets and corresponding indicators, the action plan identifies actions for Member States, WHO Secretariat and national and international partners to

- *Close the treatment gap*
- *Address inequities, stigma and discrimination*
- *Support quality diagnosis, treatment, management and care of neurological disorders.*

Convened by the WHO, the first stakeholder meeting on implementation of the IGAP took place in Geneva in August 2022. The Global Policy Committee member, Bo Norrving was among the representatives of 18 NGOs at the meeting.

As stroke is the single largest neurological disease included in the IGAP, accounting for around 42% of the total burden of neurological diseases, the IGAP presents an excellent entry point for WSO and our members to advance access to stroke care, as well as providing an opportunity to strengthen the collaboration between WSO and WHO.

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42%
of the total burden of neurological diseases



Advancing action on stroke as part of the NCD Agenda

WHO Strategic Technical Advisory Group Dr Jeyaraj D Pandian, Vice-President of WSO, and Dr Bo Norrving, Past President of WSO, participated in the Strategic Technical Advisory Group (STAG) meeting of WHO to develop the Global Action Plan for the Prevention and Control of NCDs 2025–2030. The meeting generated a series of recommendation including recommended interventions relevant to primary and secondary stroke prevention and acute care:

- *Pharmacological treatment for hypertension*
- *Drug therapy and control of risk factors in patients with high risk of CVD*
- *Treatment of acute ischemic stroke with intravenous thrombolytic therapy*
- *Treatment of acute ischemic stroke with mechanical thrombectomy within an experienced facility*
- *Low-dose acetylsalicylic acid within 24 to 48 hours for secondary prevention of ischemic stroke*
- *Comprehensive care of acute stroke patients in stroke units with a multidisciplinary team*

The current recommendations will be further discussed with UN Members States and agencies before going on to engage with non-state stakeholders.

Consultation on Implementation of Roadmap for Prevention and Control of NCDs in South East Asia

Dr Jeyaraj D Pandian, Vice-President of WSO also attended the WHO Southeast Region (WHO SEAR) virtual consultation for non-communicable diseases (NCDs) in New Delhi in June 2022. The meeting discussed the new Regional Implementation Roadmap for the prevention and control of NCDs (2013-2030), taking into account of the new targets set for 2030 as part of the Sustainable Development Agenda.

While SEAR region has made progress towards the 2025 targets set in the regional action plan and the Sustainable Development Goal (SDG) target of one third reduction in premature mortality from NCDs by 2030, progress is inadequate and uneven. This roadmap will provide strategic direction and tools to prioritize and accelerate high impact interventions feasible in the national context.

The highlights of the roadmap are as follows:

- *Sustain and strengthen the current national policies and programs for NCDs*
- *Prioritize high impact and feasible interventions in the local context*
- *Accelerate implementation through digital health and other innovations and ensure NCDs are well covered at primary health centers and in universal health coverage*
- *Invest in data collection and measurement and make timely reliable data available for action and accountability.*

An online tool has been developed to assist SEAR Member States in prioritizing different NCD interventions as part of their national NCD response. The best buys for all NCDs, including stroke, have been modelled in this simulation tool. Emphasis was laid on integration of NCD control through major programs.

Sustaining the current gains, accelerating policy development to the best recommended levels, and developing innovative implementation strategies for coverage will be key to achieving the Sustainable Development Goal (SDG) 3.4 target: **by 2030 reduce by one third premature mortality from noncommunicable diseases through prevention and treatment, and promote mental health and wellbeing.**



Building Public Awareness

World Stroke Day 2022

This year the World Stroke Day continued with its successful Minutes Save Lives #Precioustime campaign. When it comes to stroke, time lost is brain lost. Treatment opportunities to vastly improve individual recovery is dependent on the swift recognition of stroke and immediate action. While decision-makers and healthcare providers can take action to improve access to treatments such as thrombolysis and thrombectomy, without public awareness and swift action, the impact of these efforts will be reduced.

#Precioustime Campaign 2021

This year's campaign focuses on saving Precious Time, referring to the need to act FAST in the aftermath of a stroke, as well as how that action can improve the quality of life for stroke survivors.

When somebody has a stroke, every second that goes by is crucial. As brain tissue and millions of neurons begin to fade away, time could not be more precious.

The Precious Time campaign continues to raise awareness about stroke symptoms and the importance of acting FAST.

We will also communicate what can be saved: a life, but also independence, quality of life and precious memories.

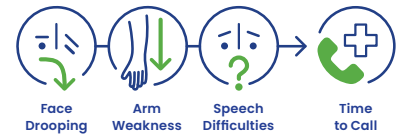
These messages are combined and communicated throughout our materials:

Minutes can save lives

Learn the signs. Say it's a stroke. Save #Precioustime



A new iconography for fast



Andrew Ang, Stroke Survivor, Singapore

"I didn't know about F.A.S.T when stroke struck. When my arm was numb and my face was drooping, I thought I could just go for a massage. If I knew about F.A.S.T earlier, I would have sought treatment. Instead, I collapsed the next day."

The WSD Panel Event

This year we will host a moderated live panel event on the topic of access to urgent care in stroke.

Panelists will include world-renowned Olympic athlete **Michael Johnson**, to talk about his own experience of stroke, as well as members from the global stroke community.

What needs to change? Connecting global campaigns to local data to advocate for change
23rd September 3pm CET

Community connection - patient voice and engagement in global and local campaigns
30th of Sept 3pm CET

Where the magic happens - developing local campaign strategies and tactics
Oct 6th 3pm CET

WORLD STROKE DAY LIVE



The World Stroke Day campaign reached a wide range of audience, and countries around the world hosted various events to gather attention for Stroke.



Minutes Save Lives #Precioustime Campaign Leaflet

World Stroke Day in Nepal.



Blessed by the King of Thailand, events like Walk Run Bike took place across Thailand to raise awareness and funds to fight stroke.



WSO developed an online game to test how fast you can spot the signs of stroke at <https://www.world-stroke.org/strokespotter>






To support community awareness building, WSO developed new resources including new Minutes Save Lives campaign videos, an interactive social media post-builder, and an online game to test recognition of stroke symptoms and speed of action. All of which are posted, alongside posters, social media assets and photography on www.worldstrokecampaign.org ready to be used whenever members are looking for quality materials or tools to support stroke symptom awareness messages in their community.

Globally, WSO delivered global digital and social media advertising campaigns, as well as engaging with online influencers who shared our message with a total of 15 million users. Our press release highlighting the global implementation gap in stroke care and announcing the launch of the WSO Stroke Centre Certification program in India was distributed globally and was picked up by news channels with a total audience in excess of 3 billion people.

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World Stroke Day 2022 in numbers

	 Events	 Visits to campaign website	 Campaign reach	 WSD news release views	 Downloads
2022	93 in 31 countries	150,637	3.1 B	90,756	8,570
2021	101 in 31 countries	53,994	2.3 B	9,989	9,575
2020	55 in 31 countries	11,399	5.1 B	189	4,835

World Stroke Day in Singapore

Following the World Stroke Congress in Singapore, World Stroke Day in Singapore was commemorated on the streets, covered by the press and supported by high profile political figures. Starting with a family-friendly event in the shadow of the Marina Bay Sands, attended by the Minister of Social and Family Development Ms Sun Xueling, around 800 people including WSO Board members and staff joined a 1km walk along the bayfront area to raise awareness of stroke and fundraise for stroke support services in the city. WSO set up a #Precioustime 'selfie station' to encourage event participants to share images and the campaign message that Minutes Can Save Lives.

At a separate event in Jurong Lake Gardens, Heng Swee Keat, the Deputy Prime Minister and a stroke survivor himself, highlighted the importance of community-based stroke rehabilitation and recovery.

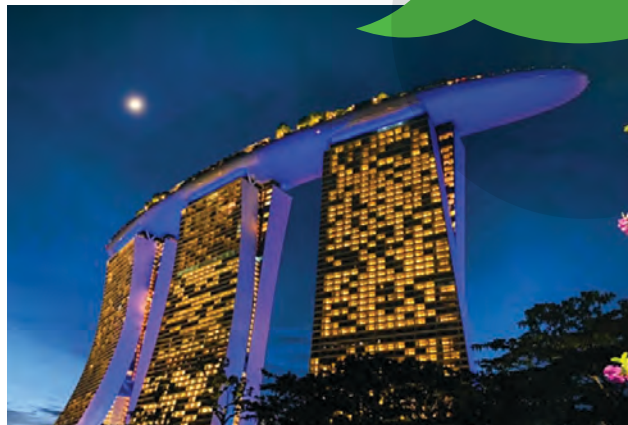


Juliet Bouverie and Rubina Ahmed of Stroke Association UK share #Precioustime message in Singapore.



WSO President Sheila Martins, Singapore Minister for State for Social and Family Development Sun Xueling, and Angels Initiative celebrate World Stroke Day in Singapore.

Around **800** people including WSO Board members and staff joined a **1km walk** along the bayfront area to raise awareness of stroke and fundraise for stroke support services in the city.



A string of landmarks around the city were lit blue to build visibility for stroke.

FAST Heroes - Officially AMAZING!

FAST Heroes, is a WSO endorsed program that works to raise community awareness of stroke symptoms and the need for emergency medical care. Using a superhero theme, FAST Heroes engages with children between the ages of 5 and 9, to improve recognition of the signs of stroke and local emergency service numbers to give children the confidence to call an ambulance straight away. Supported by several WSO member societies, the campaign leverages children's enthusiasm for learning and encourages them to spread the knowledge of stroke to the rest of their family. Through incidental learning, families and communities can become more aware and better prepared if a stroke occurs.

This year the campaign mobilised the stroke community to set a Guinness World Record for the largest number of 'superhero' selfies in an online photo album. The record was set with a total of 20,350 unique photos uploaded from 20 countries around the world.

Photos submitted by children, parents, grandparents and WSO members helped to create a brilliant collection of images. The WSO Campaign Manager participated in the press event at Tower Bridge London alongside FAST Heroes lead Jan van der Merwe.



FAST Heroes collaboration dubbed 'Officially Amazing' for record breaking stroke symptom awareness campaign.

**In total,
20,350**
unique photos were submitted, with children, parents, grandparents (and some prominent WSO members!) sharing 'superhero selfies' from all around the world

Committed to Changing Perceptions of Stroke

At the 2022 strategy development workshop, WSO made a strategic commitment to change public perceptions towards stroke from a sense of inevitability and apathy, towards an attitude of agency and the real possibility of 'a life free from stroke'.

Shifting perceptions has the potential to transform outcomes and underpins the achievement of all WSO objectives: including but not limited to driving political engagement and investment and motivating individuals to reduce stroke risks, spot a stroke or engage in rehabilitations.

In 2023 WSO will hold a workshop to develop a global campaign framework to support delivery of this commitment over the next 4 years.

4 Building Healthcare Capacity to Tackle Stroke

World Stroke Congress (WSC) 2022

The 14th World Stroke Congress (WSC 2022) was held in Singapore from October 26-29, 2022. We were pleased to welcome 4,444 participants (2,420 online and 2,024 onsite participants) from 105 different countries to discuss the new frontiers in stroke care. We united in-person after 2 years of virtual meetings as One Voice for Stroke and spent 4 inspiring days filled with the latest discoveries in stroke science, research, and technology. Together we connected, collaborated, and advanced our medical practice.



WSO president Sheila Martins speaking at the World Stroke Congress.

WSC Congress provided many benefits to the participants including:

- Access to latest science, clinical trials, breakthroughs, and guidelines to advance stroke prevention
- Highly interactive sessions with opportunity to network with faculty and delegates from all over the world
- Opportunity to showcase their work to international stroke experts
- Possibility to attend some of the sessions online at the most comfortable time and location for the delegates
- On-demand content available to participants for up to three months after the Congress

113 scientific sessions

204

invited speakers

52 live-streamed sessions

18 pre-recorded sessions

22 CME credits

Opening Ceremony at the World Stroke Congress.



Director general of the World Health Organization, Tedros Adhanom Ghebreyesus, giving welcoming speech at the world stroke congress.

Scientific program:

The 2022 Congress program featured the latest and emerging topics in stroke care, for stroke professionals, researchers, and policy makers, with a structure that allowed for greater interaction, discussion, learning, and networking opportunities.

We are thankful to our participants, speakers, supporters, and exhibitors for making WSC 2022 a great success and we are looking forward to meeting you all in person for the 15th World Stroke Congress from October 10-12, 2023, in Toronto, Canada.

<https://worldstrokecongress.org>

4 plenary sessions

460+ e-posters

113 free communication presentations

185 short communication presentations

11 teaching courses

10 joint sessions

6 debates



WSO past-president Marc Fisher speaking at the World Stroke Congress.

one voice

Global Stroke Alliance Meeting

The second Global Stroke Alliance meeting took place in São Paulo, Brazil, from August 10–13, 2022. More than 1,200 people from 26 countries attended this event which was jointly hosted by the World Stroke Organization and Rede Brasil AVC. Focused on implementing best practices in stroke care across the care pathway, stroke specialists, health managers, researchers, policy makers, and industry came together over four days to discuss implementation of evidence-based public policies and practices for stroke prevention, acute treatment and rehabilitation.

The meeting drew 7 Ministers of Health, representing countries across Latin America, to build policy commitment to implementation of evidence-based stroke strategies across the region and to support accountability around the commitments made the first Global Stroke Alliance meeting in 2020.

The meeting also formally recognized the achievements of the first 38 stroke healthcare institutions to receive WSO Stroke Centre Certification across Latin America and distributed a total of 90 Diamond, Platinum, Gold, Silver, and Bronze medals to hospitals during the WSO Angels Award ceremony. The feedback from the participants of the meeting was overwhelmingly positive and we strongly believe that these meetings will continue to have a significant impact in reducing the burden of stroke in the region. Based on the clear success of the Global Stroke Alliance focus and format for building multi-sectoral engagement in quality stroke care delivery, WSO will be moving on to expand the approach around the world. The next meeting is scheduled to take place in New Delhi, India, in September 6-8, 2023.

More than

1,200

people from

26 countries

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2022 Global Stroke Alliance

for stroke without frontiers
III Latin American Ministerial Meeting
10-13 • august • Sheraton WTC • São Paulo



Opening Plenary Sessions at the Global Stroke Alliance Meeting.

International Journal of Stroke

The International Journal of Stroke, now in its 18th year, is the flagship journal of the World Stroke Organization, with free access offered as a major benefit for WSO members. All WSO members now also receive a monthly link to the full issue as a pdf. The journal publishes reviews, original research, consensus statements and guidelines, and study protocols. We also have a very successful social media programme with twitter (@IntJStroke with over 13,000 followers) and have recently set up a WeChat account (QR code below) which publishes Chinese translations of the abstract of a number of IJS papers.

Hugh Markus has been Editor-in-Chief since 2020. He is joined by 5 Associate Editors throughout the world including Julie Bernhardt, Australia, Thomas Leung, Hong Kong, Craig Anderson from Sydney Australia and Beijing China, Ynte Ruigrok from Utrecht Netherlands, and Frank-Erik de Leeuw from Nijmegen Netherlands.

The journal's Editorial Board is key to successful running of the Journal, both by providing high quality reviews and also ideas for other IJS initiatives including reviews. We review the Editorial Board on an annual basis and aim to increase diversity, age range and gender. The proportion of women on the Editorial Board has increased from 28% in 2019 to 42% in 2022.

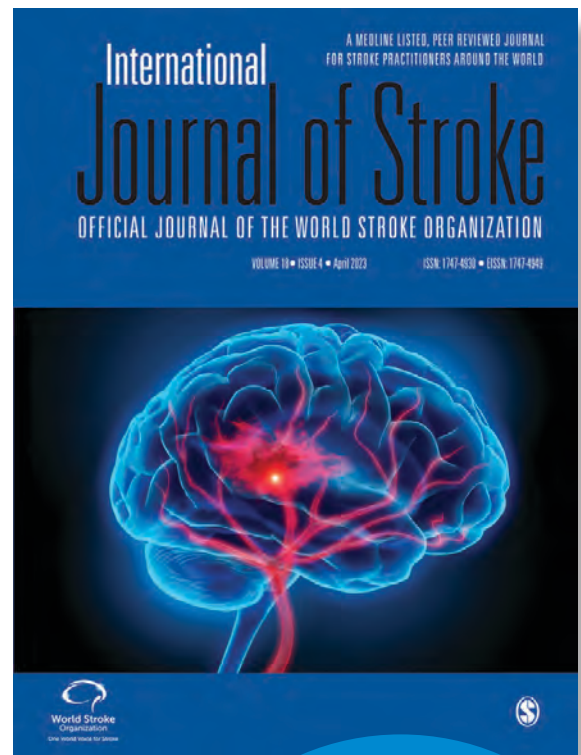
Impact factor:

In 2022 the IJS impact factor rose from 5.26 to 6.98. The journal's impact factor has risen every year from 2015 when it was 3.04. We have moved up in impact factor order from 43rd to 25th in the 212 journals listed under Clinical Neurology.

Reducing time to publication:

A priority is reducing time to publication for our exciting research. We have markedly reduced the time to first decision from 32 days in 2019 to 15 in 2020, 14 in 2021 and 13 in 2022 and time to final decision from 43 days in 2019, 24 days in 2021 and 18 days in 2022. All papers are now published as PDFs straight after acceptance, so they are available on PubMed about 2 weeks after acceptance prior to proof reading and final online publication. We have experienced an increase in time from first receipt of article by the publisher Sage to online first publishing in 2022 but are working hard with Sage to reduce this.

Much of our increased performance is dependent on the excellent support we receive from Annette Butler, Reka Toth, and Kasia Jooste in the Editorial Office and we are very grateful to them for their hard work.



The proportion of women on the Editorial Board has increased from 28% in 2019 to **42%** in 2022.

The International Journal of Stroke, now in its 18th year, is the flagship journal of the World Stroke Organization, with free access offered as a major benefit for WSO members.

In 2022 the IJS impact factor rose from **5.26** to **6.98**

Recognizing reviewers

We are very dependent on our excellent reviewers, and particularly our editorial board, and to recognize this we are now publishing a thanks to our reviewers with all those who have reviewed at least three papers in the last listed; the first time was in our January 2023 issue. We have also instituted a top reviewer award presented during the plenary session at the annual World Stroke Congress. The first award in Singapore in 2022 went to Xinyi (Cindy) Leng from Hong Kong.

Increasing worldwide coverage through blogs:

As the WSO journal our remit is to cover stroke throughout the world and we are keen to advertise clinical and research advances, not only from well-resourced countries, but also from lesser research funded countries. To aid this we started new IJS blogs in 2020 and have had exciting blogs from Nepal, Brazil, Nigeria, Philippines, and India over the last year. Do visit our IJS blogs page to see more.

<https://www.world-stroke.org/news-and-blog/blogs?cat=67>

... we started new IJS blogs in 2020 and have had exciting blogs from Nepal, Brazil, Nigeria, Philippines, and India over the last year.

Working with our WSO partners to increase impact:

We have developed close working relationships with other WSO programs in order to increase impact. We have worked with the Guidelines Committee and will shortly publish the WSO synthesis of guidelines on stroke care from throughout the world.

We are working with the excellent World Stroke Academy who now arrange interviews with authors of select IJS papers.

We also work closely with the very successful future leaders program to help train them in the publishing process. A number of future leaders have become valuable reviewers and we are delighted that 3 have now joined our editorial board.



one voice

World Stroke Academy



The WSA is the dissemination and educational platform of the World Stroke Organization. Our educational program is designed to cover stroke prevention, diagnosis and acute treatment, health care gaps, and neurorehabilitation across the continuum of patient care.

We share and enhance the knowledge of stroke around the world by providing high quality, globally relevant stroke education to healthcare professionals, through a variety of formats:

- [Webinars](#)
- [e-Learning modules](#)
- [Case studies](#)
- [Stroke checklists](#)
- [Congress webcasts](#)
- [Paper Of The Month](#)
- [Podcasts](#)
- [Interviews](#)
- [Monthly newsletters](#)
- [#WomenInStroke](#)
- [#LifeAfterStroke](#)



By registering to the WSA you get access to:

- *Free, open access medical education resources*
- *User-friendly platform, with advanced e-learning technology to enhance members engagement*
- *Peer-reviewed content by the WSA Leadership Group and WSO Education Committee,*
- *in line with WSO policies and commitment to diversity*



2022 Overview



Call for proposals!

We invite you to contact us if you are interested in submitting clinically applicable education components. This includes, case studies, clinical practice guidelines or science blogging. We actively encourage WSO members and non-WSO bodies to submit ideas and topics to our editorial team for future educational activities.

You can submit your proposal here: <https://form.jotform.com/212725774437058>
We also welcome any feedback on our educational offer and always welcome new ideas or suggestions for improvement – so please get in touch with us!
Contact: education@world-stroke.org

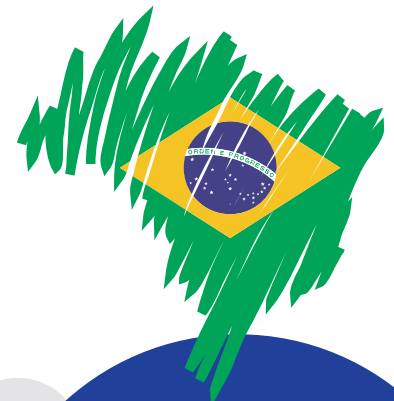
Join our
#strokecommunity
on social media!



Mobilize!Brazil

Launched in December 2021, Mobilize!Brazil trained Community Health Workers (CHW) across the country on stroke risk factors for prevention, behaviour modification, screening and management of hypertension and atrial fibrillation using the power of mobile technology. The training layered onto existing WHO HEARTS and Better Cities initiatives to provide a holistic approach that mirrors key aspects of the WSO Prevention Roadmap. Mobilize!Brazil hosted 3 webinars for the CHW training program in partnership with the Ministry of Health in Brazil, delivered 2 online cohort support sessions every three months to learn about risk factors, stroke signs and to learn about the StrokeRiskometer, and translated 10 WSO prevention information leaflets and the StrokeRiskometer into local languages. Before the training, 29% of CHWs had 70% or more correct answers in the pre-test and we are pleased to observe that 78% had more than 70% of the answers correct in the post-test.

Following the training, the StrokeRiskometer was used within communities to conduct assessments and familiarize individuals with their lifetime risk of stroke, highlighting where this can be reduced, and sharing information on relevant risk factors and prevention. The incorporation of motivational push notifications helped keep participating individuals engaged over the course of the program. In the end, 3,350 individuals were assessed by trained CHWs using the StrokeRiskometer app and 6 months after training, 78.9 % out of 97 patients replied that the StrokeRiskometer helped them to know the risk factors and 62% of them replied that it helped them to modify their risk factors.



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Brain and Heart Global Initiative

The pilot feasibility WSO BEAT program included **10 sites from 8 countries**, including Brazil, China, Egypt, Germany, Japan, Mexico, Romania, and the USA.

The World Stroke Organization (WSO) Brain & Heart Task Force developed The Brain & HEart GlobAl IniTiative (BEAT), a pilot feasibility program aimed at establishing clinical collaborations between cardiologists and stroke physicians who work at large healthcare facilities. The WSO BEAT pilot project focused on atrial fibrillation (AF) and patent foramen ovale (PFO) detection and management, highly prevalent cardioembolic causes of ischemic stroke and transient ischemic attack (TIA).

The pilot feasibility WSO BEAT program included 10 sites from 8 countries, including Brazil, China, Egypt, Germany, Japan, Mexico, Romania, and the USA. Of the 10 sites, two belonged exclusively to the public sector and one was public and private. The primary objective of the pilot was to assess its feasibility by achieving a composite feasibility outcome including: (1) developing site-specific clinical pathways for the diagnosis and management of AF, PFO, and the stroke heart syndrome; (2) establishing regular neurocardiology rounds (e.g., monthly, bimonthly, etc.); and (3) incorporating a cardiologist to the stroke team.

Overall, the WSO BEAT program successfully achieved the pre-specified goals at most sites. Regarding the three primary program objectives, 9/10 (90%) of the sites were able to design or update the proposed clinical care pathways, establish neurocardiology rounds, and designate a dedicated cardiologist for the stroke team, respectively.

A peer-reviewed paper reporting the results of the WSO BEAT program is in press in the Cerebrovascular Disease Journal.

Supporting early career and advanced stroke researchers

In 2022, the WSO Research Committee continued to work within the goals of its Research Activity Framework that was developed and agreed in the previous year. The framework encompasses activities in research, research education, research advocacy and research support. This framework has helped our committee to establish and complete a range of activities to support the goals of the WSO.

The **Stroke Research Funding Versus Burden of Disease** project (STARBUD) – a project led by former committee chair Julie Bernhardt aims to compare world-wide research spending on Stroke, Heart and Cancer. Country variation and, if possible, differences in investments in people (fellowships, scholarships) and projects will also be assessed. To date there are data from Australia, Austria, Brazil, China, Croatia, Denmark, Finland, France, Germany, Mexico, Rwanda, Russia, Singapore and Sweden. The project is expected to finish in late 2023.

The Research Committee prepared an initiative to foster **“Big Data”** research in stroke, by providing education about rigorous methods to collect, analyze large volumes of good-quality data and define key questions to be answered.

The Research Committee monitored the projects funded by WSO pilot research grants which were advertised in 2021. Projects were conducted throughout 2022. Reports are expected before the end of 2023. Advertisement for a new call for these seed grants is expected in 2023.

The committee has started a collaboration with the Global Alliance of Independent Stroke Networks (GAINS) in order to support early-career and advanced trialists around the world.

The Research Committee prepared an initiative to foster “Big Data” research in stroke, by providing education about rigorous methods to collect, analyze large volumes of good-quality data and define key questions to be answered. The first step is to provide education and the second step, to facilitate networking and collaborations across the globe. One research educational initiative was held in April, 2022, in close collaboration with the World Stroke Academy (WSA): the webinar “Big Data, a game-changer to advance stroke care in the digital era”.

The webinar is available at: <https://www.youtube.com/watch?v=iXGLVc4dZsY>.

An e-learning course with speakers from five continents was organized with the support from the WSA. Talks are being recorded and will be available on the WSA website. Another webinar to summarize the main points of the course was planned and is expected to take place before the end of 2023.

one voice

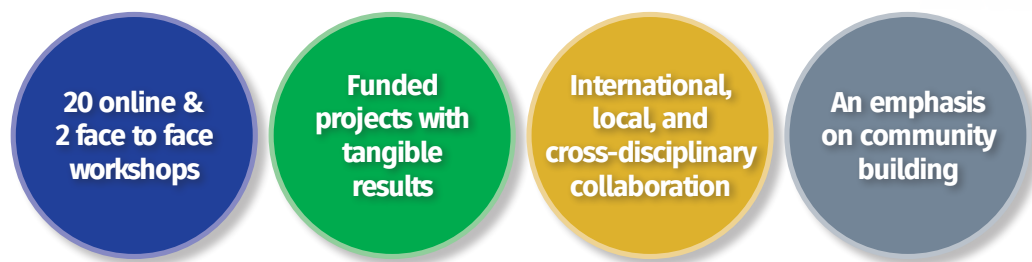
Future Stroke Leaders



The Future Stroke Leaders Program (FSLP) is an initiative of the WSO to develop the technical and research skills of the next generation of stroke professionals. This 2-year program offers 20 3-hour long online sessions, case studies, simulations, group work and journal publishing, 2 online and face-to-face conferences, funded projects' development, and World Stroke Congress participation.

Paired with the accessibility of distance learning with the strength of WSO faculty-led coaching sessions by stroke experts from 12 countries and guest speakers, FSLP creates a hybrid program curriculum that meets the evolving demands of the current complex landscape learning environment which is as efficient as it is effective. Besides the online sessions, the program offers a face-to-face conference, project mentoring sessions and funded initiatives. In addition, the program offers not just traditional medical sessions but also expands into topics such as communication, leadership, the use of social media, and advocating with policy makers. This helped to make the program more well-rounded and improve tangible outcomes.

Key programme elements:



Please read more here: <https://www.world-stroke.org/world-stroke-future-leaders>

Cohort 1 (2020-2022 intake)

The program covered 20 online sessions and 2 face to face workshops in Dubai and Singapore. As a milestone of the FSLP program, the in-person conference in Dubai, UAE anchored the 2-year journey of online classes, discussions, international collaborations, and mentoring.

The World Stroke Congress 2022 was a special occasion for the FSLP participants of cohort 1 – they had a final conference at Singapore University, where many important topics were covered ranging from international leadership, article review, train the trainer simulation and stroke debates. During the congress program graduates presented tangible outcomes of their funded projects.



Group photo of FSLP participants of cohort 1 in Singapore.

- *African project phase 1 educational modules and tele-stroke app development*
- *ENIGMA Stroke App- mobile application developed especially for non-specialists to aid them in delivering evidence-based stroke care*
- *Improving life after stroke for young people: analysis of unmet needs and development of resources across countries*
- *Unveiling the cost of acute stroke care in Latin America: cost-effectiveness analysis with real-world data in countries where thrombolysis or mechanical thrombectomy is not widely available*

FSLP – Cohort 1 was able to achieve global impact:

- Set-up international collaborations for global/regional stroke care improvement
- Publications
- International research
- Educational and awareness activities

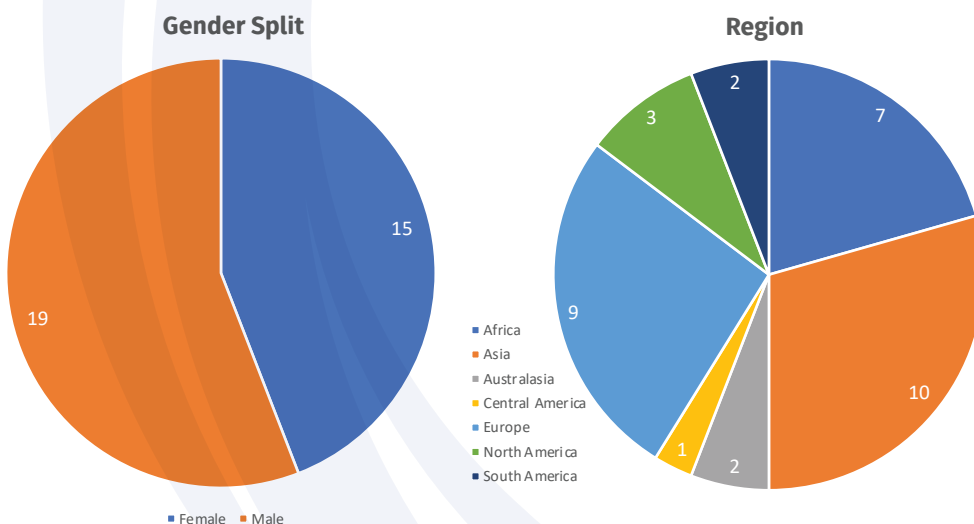
Future Stroke Leaders Programme - Cohort 1 funded projects results

<p>1</p>	<p>Acute care Feasibility and challenges of acute stroke care implementation in two African countries: a pilot study</p>	<p>Outcomes: Educational modules, tele-stroke app development</p>
<p>2</p>	<p>Task sharing Establishing Organized Stroke Care In Low-And-Middle Income Countries: From Training of Non-Specialist to Implementation</p>	<p>Outcomes: ENIGMA Stroke App- mobile application developed especially for non-specialists to aid them in delivering evidence-based stroke care</p>
<p>3</p>	<p>Post-stroke care Improving life after stroke for young people: analysis of unmet needs and development of resources across countries</p>	<p>Outcomes: Improve stroke care pathways both globally and regionally</p>
<p>4</p>	<p>Cost of stroke care Unveiling the cost of Acute Stroke Care in Latin America: a comprehensive analysis</p>	<p>Outcomes: Opportunity to perform cost-effectiveness analysis with real-world data in countries where thrombolysis or mechanical thrombectomy is not widely available</p>

Cohort 2 (2022-2024 intake)

In March 2022, the WSO invited applications to the Future Stroke Leaders Program. Within 3 weeks, the application page was closed due to a high number of applications – 100+ applications were received. A total of 34 early career clinicians and researchers from 23 countries, evenly divided by gender and geography with a diversity of backgrounds, were admitted to the WSO Future Stroke Leaders Program, Cohort 2 (2022-2024 intake).

The face-to-face conference for FSL Cohort 2 will take place in Mannheim, Germany on April 30 - March 4, 2023. The programme will span hyperacute care, arteriosclerosis, basic science, neurogenetics, managing research grants, and AI, to a specially designed communication workshop by an external provider. The program will also offer a visit to Heidelberg University Hospital.



5 Improving Access to Quality Stroke Care

Global Guidelines and Tools

2022 has been a busy and productive year for the Guideline Committee, culminating in publication in early 2023 of an update of WSO Global Stroke Services Guidelines and Action Plan. After publication of our PROSPERO protocol, members of the Committee and a separate guidelines development group performed in-depth literature searches to identify stroke guidelines published since 2011. We evaluated their quality using the AGREE II tool, extracted strong recommendations by dividing into subgroups focused on acute care, secondary prevention and rehabilitation/life after stroke, and obtained stakeholder comments from members of the WSO Board, stroke support organizations (SSOs), and people with lived experience of stroke (PWLE).

There was substantial consensus between guidelines for many strong recommendations for acute care and secondary prevention for ischaemic stroke, and aspects of rehabilitation while less evidence for the management of intracerebral hemorrhage. Strong recommendations were made for reperfusion therapies for acute ischaemic stroke. For secondary prevention, strong recommendations included establishing etiological diagnosis; management of hypertension, weight, diabetes, lipids, and lifestyle modification; and for ischaemic stroke, management of atrial fibrillation, valvular heart disease, left ventricular and atrial thrombi, patent foramen ovale, atherosclerotic extracranial large vessel disease, intracranial atherosclerotic disease, and antithrombotics in non-cardioembolic stroke.

For rehabilitation, there were strong recommendations for organized stroke unit care, multidisciplinary rehabilitation, task-specific training, fitness training, and specific interventions for poststroke impairments. However, most guidelines overlooked issues such as comorbidity, resource implications, and implementation; many lack recommendations on some important 'life after stroke' areas such as fatigue, apathy and cognition, and none for end of life care after stroke. This reflects a lack of primary research, particularly randomized controlled trials, in these areas. We also noted duplication of effort and repetition between different guideline developers; and that involvement of PWLE was often limited.

To optimize the dissemination efforts, the future agenda includes a WSO webinar in June 2023, a YouTube video for stroke support organizations, e-learning modules and presentation of the findings at upcoming stroke conferences, and discussion with WSO about living guidelines and its implementation. Guideline developers are considering more efficient methods for guideline production, for example creating a shared repository of stroke trials to avoid repetitive literature searches by different groups. Finally, we hope that research funders will commission more research in life after stroke—an area that is of crucial importance for PWLE—and ensure that people with frailty and comorbidity are included in stroke trials.



Stroke Center Certification

The certification of stroke centers is critical to ensure that hospitals implement and monitor all priority strategies that change the outcomes of stroke by reducing patient mortality and disability. It is a great opportunity to support the continuous improvement of services and implementation of high-quality comprehensive care. Certification is a priority step to guide national stroke care development along evidence-based pathways.

The certification of stroke centers is critical to ensure that hospitals implement and monitor all priority strategies that change the outcomes of stroke by reducing patient mortality and disability.



Group picture with WSO President Sheila Martins at the World Stroke Organization and National Accreditation Board of Hospitals and Healthcare providers (NABH) joint Stroke center certification program.



Award Ceremony for Recognition of Stroke Centers who received the WSO and the SIECV stroke center certification.

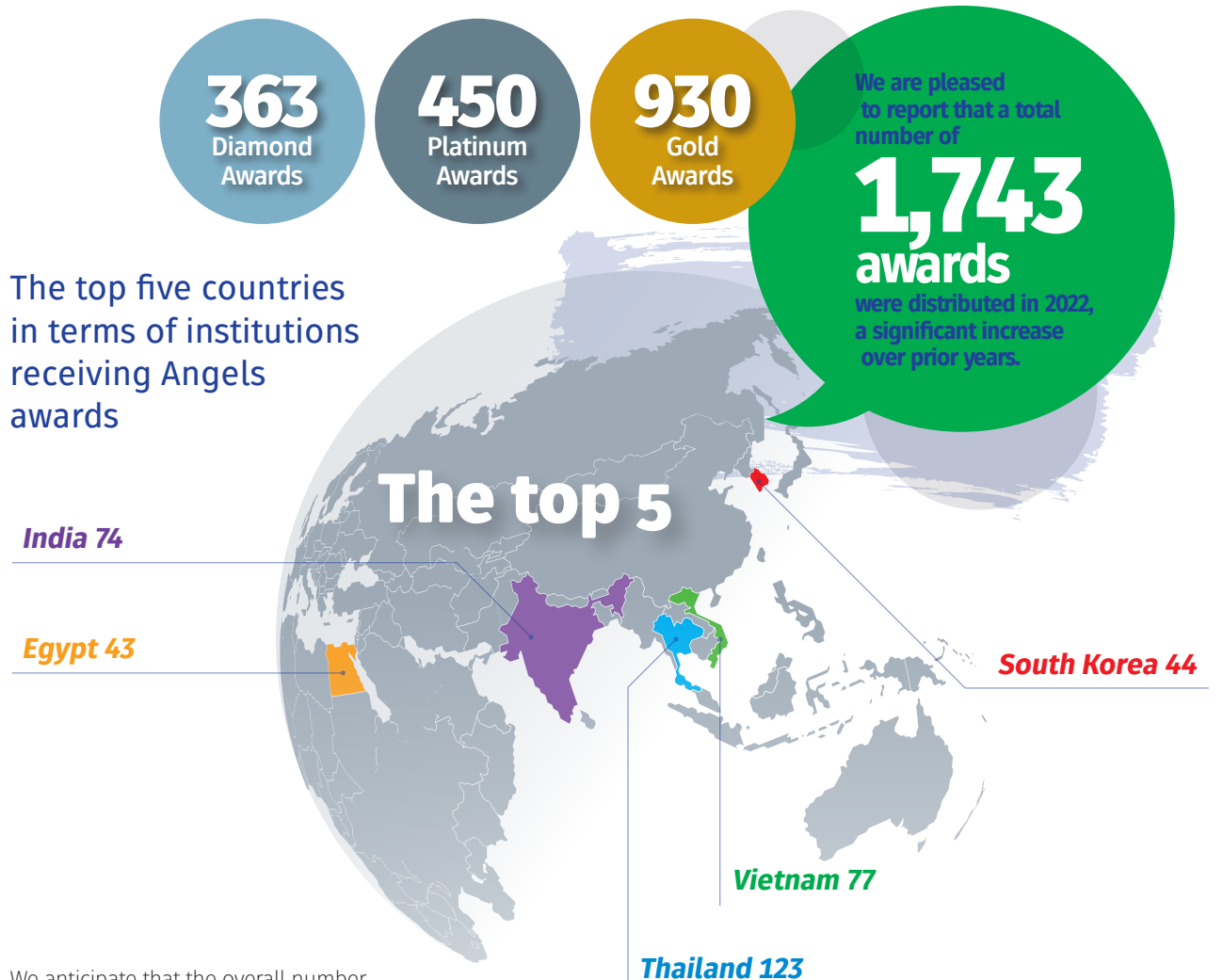
On March 2022, WSO-SEIVC launched Stroke Center Certification in Latin America. Among 370 hospitals that conducted online assessment, 183 met the criteria for certification. 82 hospitals applied for certification and uploaded the confirmatory documents in the platform. After the onsite visit by a stroke neurologist the full stroke center assessment is presented to an international review board that gives the final approval. A total of 37 hospitals from 9 different countries were certified in the first round.

On November 1 2022, at New Delhi, National Stroke Summit organized by Federation of Indian Chambers of Commerce & Industry (FICCI) launched a joint Stroke Center Certification program with the World Stroke Organization and the National Accreditation Board of Hospitals and Healthcare providers (NABH). The goal is to certify 25 to 30 hospitals in one year, increasing the quality of services in the region and improving outcomes.

one voice

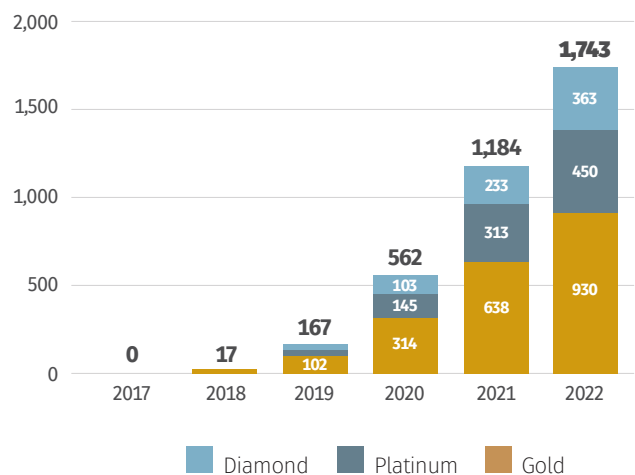
WSO – Angels Awards

WSO is committed to improving outcomes for stroke, by ensuring patients worldwide get access to stroke care that optimizes their survival and recovery. As part of this work, we partnered with the Angels Initiative (Boheringer-Ingelheim), to increase the number of patients who are treated in stroke ready hospitals and to optimize the quality of treatment in all existing stroke centers



We anticipate that the overall number of Awards granted in 2022 will rise as some hospitals finish their annual data collection process.

During the 2nd Global Stroke Alliance meeting 90 Diamond, Platinum, Gold, Silver and Bronze awards were distributed to hospitals in Latin America on the basis of the standard of care being provided by their institutions.



6 Building Capacity of Stroke Support Organizations

SSO activities and achievements

The vital contribution of stroke support organizations

During 2022, the stroke support organization (SSO) global community continued to make vital contributions to improving stroke awareness, providing stroke support activities in the community, and influencing policy and practice in collaboration with academics, clinicians and people affected by stroke.

Knowledge exchange

At the World Stroke Congress in Singapore, we convened two SSO sessions in the main program: *Measuring patient experience and outcomes to influence service delivery* and *Using co-design in the development of stroke services*. People with lived experience of stroke participated and *shared their insights*. SSOs were also involved in a further eight sessions across the congress program, focused on their stroke awareness, research and advocacy work.

In collaboration with the National Stroke Association of Malaysia and the Singapore National Stroke Association we hosted the first Stroke Exchange Forum in October. 50 stroke advocates joined discussions on collaboration, involvement of people with lived experience and the status of stroke care in Asia. In feedback, 78% said such meetings were very important.

You can find recordings of the World Stroke Congress SSO sessions and the Stroke Exchange Forum on Stroke Connector.

(<https://stroke-connector.world-stroke.org/login>)

The voice of lived experience

Sharing peoples' lived experience of stroke can help us all to understand the impact of stroke and highlight important insights to help to drive improvements in stroke prevention, treatment, and support. At the World Stroke Congress, we shared 70 testimonials from people affected by stroke from 25 countries on screens in the exhibition and lecture halls. You can view these powerful testimonials on Stroke Connector https://stroke-connector.world-stroke.org/assets/downloads/Testimonial_ALL.pdf.



The National Stroke Association of Malaysia (NASAM), community rehabilitation.

SSO achievements

Throughout 2022, we showcased the contributions of SSOs to improving stroke awareness, providing stroke support and influencing policy and practice in our [blogs and case studies](#).

WSO Advocacy Goals and Stroke Support Organizations

Following the launch of the WSO global policy advocacy goals, Dr Michelle Nelson, VP of WSO and co-Chair of the WSO Stroke Support Organization Committee [explored](#) how we can harness the potential of stroke support organizations to improve long-term support for stroke survivors, family and carers.

Mobilising to raise awareness of stroke in Sierra Leone

Started as a patient and caregiver reference group in the set-up phase of the Stroke in Sierra Leone research project, the [Stroke Association Sierra Leone](#) is continuing to raise awareness of stroke.

Innovative ways to reach young people with the stroke prevention message

As part of its Campaign to Combat Stroke 2021, Associação Brasil [AVC](#) organised the 'Interactive Exhibition of Stroke – Life goes on', a project with the Municipal School Enfermeira Hilda Anna Krisch in Joinville.

Delivering a win-win approach to raise stroke awareness and funds

During May Stroke Awareness Month 2022 in Malawi, the local [SSO](#) partnered with different corporations in the country, adopting a win-win approach by offering awareness activities targeted at the young workforce, while securing funding from the corporations in exchange.

Connecting with the SSO global network to share ideas and resources

Staff from [March of Dimes Canada](#) and the [Stroke Association UK](#) have been meeting to share peer support ideas and resources to help improve long term support for people affected by stroke. They reflected that the global [SSO](#) network allows them to connect with one another and build important relationships more seamlessly.

Throughout 2022, we showcased the contributions of SSOs to improving stroke awareness, providing stroke support and influencing policy and practice in our blogs and case studies.



Dr Bindu Menon Foundation, Neurology on Wheels, India.



Associação Brasil AVC, stroke awareness with young people.

“ We encourage all stroke support organizations to reach out to others in this global network and to learn from one another – each one of us is a valuable resource!”

*Christina Sperling,
March of Dimes Canada and
Beth Scrimshaw, Stroke
Association UK*

“ The SSO in Malawi has been offering me advice on behavior change to prevent a recurrence. They have been involved in awareness campaigns, be it within our local SSO or at gatherings where we have a chance to speak.”

Idriss Kassim, Malawi

“ The stroke survivors organization in Sierra Leone means so much to all survivors and their caregivers and this monthly experience sharing event is looked forward to with hope.”

*James Williams,
Stroke Association Sierra Leone*

“ People don't expect strokes to happen to someone young, but they can happen to anyone at any age. This is why awareness drives like the Stroke Foundation of New Zealand's FAST campaign are so important”

Hannah Paterson, New Zealand

7 Uniting the Stroke Community

Membership

This year WSO achieved its highest number of members - 3,533 including 102 society members from 95 countries, and 3,431 individual members.

We have continued to attract new and engage current members throughout the year. SSO membership grew once again, and we had 80 SSO members of WSO. Six of these organizations from South Africa, Democratic Republic of Congo, Tanzania, India, Singapore and Romania were brand new to WSO. This marks the steady growth of the WSO membership and the healthy advance of the organization's global influence.

We thank our members, and we assure you that we will rely on your continuous trust and support in 2022 as well.

3,533
members including
102 society
members from
95 countries,
and **3,431**
individual members.

2022 Membership by region

South America 3%

Oceania 9%

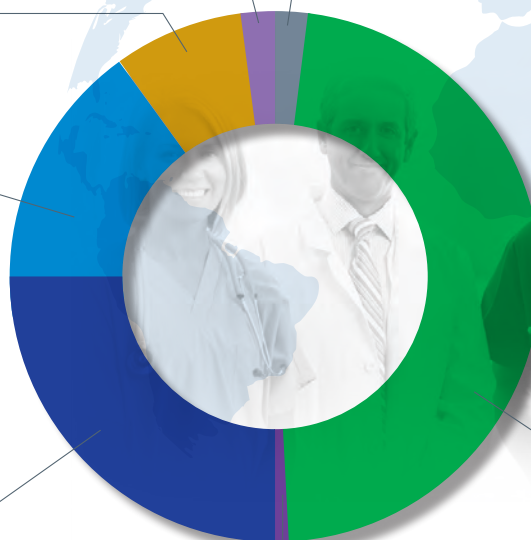
North
America 14%

Europe 25%

Africa 3%

Asia 45%

Caribbean &
Central America 1%



one voice

Stroke Support Organizations:

A Stroke of Luck, *United Kingdom*
 A.L.I.Ce. Italia ODV, *Italy*
 Acao AVC, *Brazil*
 Acha Memorial Foundation, *Nigeria*
 Ageless Bicyclists Ltd, *Singapore*
 ALIA Association, *Romania*
 AMAVC- Associação Mineira do AVC, *Brazil*
 Asociacion Nacional Contra el Infarto Cerebral A.C., *Mexico*
 Association for fight against stroke, *North Macedonia*
 Association for Stroke and Aphasia, *Bulgaria*
 Azur Vigilance Cameroun/Cameroon Stroke Association, *Cameroon*
 Bangalore Stroke Support Group, *India*
 Bangladesh Stroke Association (BSA), *Bangladesh*
 Bhutan Stroke Foundation, *Bhutan*
 Brain Heart Foundation, *India*
 Brazilian Stroke Association (Associação Brasil AVC), *Brazil*
 Coming Home Organization, *South Africa*
 Countertstroke Fiji, *Fiji*
 Croí, the West of Ireland Cardiac & Stroke Foundation, *Ireland*
 Cyprus Stroke Association, *Cyprus*
 Dr Bindu Menon Foundation, *India*
 Dumazedier Kabasele Foundation, *Democratic Republic of the Congo*
 Finnish Brain Association, *Finland*
 Fundacion Dominicana de Accidente Cerebral, *Dominican Republic*
 Healings in Motion, *United States*
 Heart and Stroke Foundation of Canada, *Canada*
 Heart Stroke Foundation of Barbados Intl., *Barbados*
 Heart to Heart for Bulgaria Foundation, *Bulgaria*
 Helderberg Stroke Support Group, *South Africa*
 Hope for Stroke TT, *Trinidad and Tobago*
 International Alliance for Pediatric Stroke, *United States*
 Jamaica Stroke Alliance, *Jamaica*
 Japan Stroke Association, *Japan*
 Latin America and Caribbean Stroke Network, *Brazil*
 March of Dimes Canada, *Canada*
 Michael and Francisca Foundation, *Nigeria*
 Monaco AVC Association, *Monaco*
 National Stroke Aid, *Zambia*
 National Stroke Association of Malaysia, *Malaysia*
 National Stroke Association of Sri Lanka, *Sri Lanka*
 National Stroke Foundation, *Australia*
 Nepal Stroke Association, *Nepal*
 Neurology Awareness and Research Foundation, *Pakistan*
 Por una vida libre de ACV, *Argentina*
 Porazka.sk, *Slovakia*
 Red Bracelet Volunteers Corps, *China*
 Road 2 Recovery Foundation, *Nigeria*
 Sakina Ward stroke saviours group, *Tanzania*
 Seychelles Stroke Foundation, *Seychelles*
 Singapore National Stroke Association, *Singapore*
 Slovenian Stroke Support Organization, *Slovenia*
 Stoke and Nervous System Disorders Foundation, *Nigeria*
 Stroke Action Nigeria, *Nigeria*
 Stroke Action Rwanda, *Rwanda*
 Stroke Alliance for Europe, *Belgium*
 Stroke and Aneurysm Support - Philippines, *Philippines*
 Stroke and Diabetes Education & Aid Foundation (SADEAF), *United Kingdom*
 Stroke Association, *United Kingdom*
 Stroke Association Of Kenya, *Kenya*
 Stroke Association Sierra Leone, *Sierra Leone*
 Stroke Association Support Network-Ghana, *Ghana*
 Stroke Care International, *United Kingdom*

Stroke Central New Zealand Inc., *New Zealand*
 Stroke Foundation Of Bengal, *India*
 Stroke Foundation of NZ Limited, *New Zealand*
 Stroke Foundation Uganda, *Uganda*
 Stroke Organisation Zimbabwe, *Zimbabwe*
 Stroke Recovery Foundation, *United States*
 Stroke Support Group (Pretoria)/ Beroerte Ondersteuningsgroep (Pretoria), *South Africa*
 Stroke Support India (Nav Anubhuti Welfare Society), *India*
 Stroke Support Organization (Malawi), *Malawi*
 Stroke Support Organization for Sri Lankans, *Sri Lanka*
 Stroke Support Organization- East Azerbaijan (SSO-EA), *Iran*
 Stroke Aid Foundation, *Ghana*
 SurvivorS 4 SurvivorS Inc., *United States*
 Tanzania Heart Club, *Tanzania*
 The Heart and Stroke Foundation South Africa, *South Africa*
 The Stroke Survivors Foundation, *South Africa*
 Together Against Stroke, *Georgia*
 YoungStroke, Inc., *United States*

Scientific Organizations

American Stroke Association, *United States*
 Asia Pacific Stroke Organization (APSO), *Hong Kong*
 Association of Neurovascular Clinicians, *United States*
 Belgian Stroke Council, *Belgium*
 Brazilian Stroke Network, *Brazil*
 Canadian Stroke Consortium, *Canada*
 Central and Eastern European Stroke Society, *Croatia*
 CHU Caen Normandie, *France*
 Danish Stroke Society, *Denmark*
 Department of Stroke and Cerebrovascular Medicine, *Kyoto University, Japan*
 European Society of Neuroradiology - Diagnostic and Interventional, *Switzerland*
 European Stroke Organization, *Switzerland*
 Ever Pharma, *Vietnam*
 Gold Coast University Hospital, *Australia*
 Greek Society Of Cerebrovascular Diseases (Hellenic Stroke Society), *Greece*
 Huashan Hospital, *Fudan University, China*
 Indian Stroke Association, *India*
 Kariya Toyota General Hospital, *Japan*
 Korean Stroke Society, *South Korea*
 Pockit diagnostics, *United Kingdom*
 Sociedad Boliviana de Medicina Crítica y Terapia Intensiva filial Santa Cruz, *Bolivia*
 Sociedade Portuguesa do Acidente Vascular Cerebral, *Portugal*
 Society of NeuroInterventional Surgery, *United States*
 Spanish Society of Neurology (SEN)-GEECV, *Spain*
 Stroke Program, *University of Toronto, Canada*
 Stroke Society Of Australasia, *Australia*
 Stroke Society Of The Philippines, *Philippines*
 Swiss Stroke Society SHG - Schweizerische Hirnschlaggesellschaft, *Switzerland*
 The British and Irish Association of Stroke Physicians (BIASP), *United Kingdom*
 The Danish Stroke Society, *Denmark*
 The Japan Stroke Society, *Japan*
 Turk Beyin Damar Hastalıkları Derneği/Turkish Cerebrovascular Disease Society, *Turkey*
 Ukrainian Stroke Medicine Society, *Ukraine*
 University Of British Columbia, *Canada*
 World Heart Federation, *Switzerland*
 World Hypertension League, *United States*
 World Hypertension League/Medical University of South Carolina, *United States*
 Yeungnam University Hospital, *South Korea*

Endorsed Events

WSO has endorsed 14 around the world in 2022.

WSO encourages applicants for endorsed events to use the especially designed WSO logo “Endorsed Meeting” and send a detailed narrative report and high-res photos after the event is over.

14th International Iranian Stroke Congress

21.12.22 - 23.12.22, Iran

Tianfu International Stroke Conference

21.10.22 - 23.10.22, China

8th MENA Stroke Congress

21.10.22 - 23.10.22, United Arab Emirates

NCS 20th Annual Meeting

Hybrid, 17.10.22 - 21.10.22, United States of America

8th WSO Regional Meeting Tbilisi 2022 : Stroke Prevention, Diagnosis and Treatment[®]

06.10.22 - 08.10.22 - Georgia

7th MENA-SINO Conference – Updates in Stroke and neurointervention Management

05.10.22 - 07.10.22, Egypt

10th Korea-Japan Joint Stroke Conference (KJJSC 2022 Osaka)

17.09.22 - 18.09.22, Japan

ICCA STROKE 2022

09.09.22 - 10.09.22, Germany

MENASO Education Academy Cerebrovascular Grand Round

12.08.22 - 12.08.22, United Arab Emirates

32nd Summer Stroke School – Healthy Lifestyle and Prevention of Stroke and Other Brain Impairments

Virtual, 06.06.22 - 10.06.22, Croatia

IPSO Founding Members’ Congress

24.04.22 - 26.04.22, Austria

Brain Conference

2022 24.02.22 - 25.02.22, United Kingdom

16th Portuguese Stroke Congress - Hybrid Edition

03.02.22 - 05.02.22, Portugal

B.R.A.I.N Conference 2022

05.12.22 - 08.12.22, UK

Working in Partnership for Life Free from Stroke

Achieving our vision of lives free from stroke is a task that WSO cannot achieve alone. We are committed to building our partnership networks across the health and stroke care system so that we can share knowledge and work together to accelerate improvements in prevention, treatment, and support.

WSO members

As well as setting our global goals and priorities, our members inform and contribute their expertise to everything we do, as such they are our primary partners. WSO member societies and individual stroke leaders, drive innovation in our programs, support development and implementation and contribute as advisors, educators, advocates and ambassadors at every level. Our members also guide our engagement and contribute directly to the organization's engagement with external partners.

We are committed
to building our partnership networks across the health and stroke care system so that we can share knowledge and work together to accelerate improvements in prevention, treatment, and support.

International and Non-Governmental Partners

United Nations

WSO is the only global stroke body in official consultative with the United Nations. This allows us to attend key global policy events and to contribute official statements on behalf of our members to influence global policy. Our relationship with the UN helps us to ensure that the needs and priorities of the global stroke community are heard by national governments and helps us to hold Member States to account for their global policy commitments.



United Nations

World Health Organization

WSO is a formal implementing partner for WHO. We work closely to provide stroke expertise to WHO global and regional technical advisory groups and consultations as part of the NCD response. Our members provide input to WHO programs, guideline development and consultations as part of our shared commitment to delivering equitable access to quality stroke care.



World Health Organization

We help our members to implement the HEARTS technical package in partnership with Ministries of Health in order to strengthen management of cardiovascular risk factors for stroke in primary health care settings. WSO also contributes to the assessment of evidence for inclusion of stroke treatments and technologies in the WHO Essential Medicines List. The Essential Medicines List describes treatments that all UN- member states are encouraged to offer, at a reasonable cost, or free through local healthcare provision.

one voice

NCD Alliance

We work closely with our partners in the NCD Alliance, coordinating our policy advocacy efforts to ensure that the voices of stroke experts, survivors and caregivers are heard, and that the specificity of stroke is articulated with the overall NCD policy agenda. We also collaborate to strengthen the capacity of our members to engage in policy advocacy, amplify patient voices and advance public awareness of stroke as leading cause of mortality and disability worldwide.



Our President and Executive Director participate in the Global NCD Alliance Forum and the Secretariat engages with the NCD Alliance Member Advocacy Network, PLAN (Peer Learning Advocacy Network) and work to ensure visibility for stroke in the Global Week of Action on NCDs.

Global Coalition for Circulatory Health

WSO is a member of the Global Coalition for Circulatory Health leadership group and works alongside other members including the World Heart Federation, the World Hypertension League and the International Society of Nephrology to drive action on CVD and stroke by international, regional and national stakeholders. Together we provide evidence-based submissions to UN Committee deliberations on NCDs, access to universal healthcare and disability to ensure that the leading cause of preventable death is prioritized.



Industry Partners

WSO works with industry stakeholders to advance projects in line with our strategic objectives. These collaborations also support us to maximize knowledge exchange and innovation focused on improving stroke outcomes for patients. Our work with industry is guided by our policy on industry engagement which protects our independence and our ability to advocate for and advance equitable, evidence-based stroke care.

If you are interested in becoming a World Stroke Organization partner, please e-mail admin@world-stroke.org to start the conversation.

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8 Financial Report

WSO ended the financial year with a profit of USD 31,949. As a result, we enter 2023 with a reserve of USD 2,384,028 which provides us with an operational security in an uncertain global context.

The main income derives from sponsorship and congress income.

The operational expenses were managed in line with or below the budget. The expenses increased for the Future Leaders project in 2022 since we organized two workshop for the participants.

The 2021 financial result of WSO Switzerland were audited by Fidiciaries Chavaz SA in March 2022 and the report showed that the financial statements have been presented fairly and in accordance with Swiss accounting rules. The audit report will be approved at the next General Assembly scheduled for October 2023.

A financial report for WSO's activities is shown below. This includes operations of both WSO Switzerland and WSO US.

WSO ended the financial year with a profit of

\$ 31,949

As a result, we enter 2023 with a reserve of

\$2,384,028

which provides us with an operational security in an uncertain global context.

World Stroke Organization Income and Expenses for the Year Ended December 31, 2022 (in United States Dollars)

		Total	
		2022	2021
Cash & Other Assets		2,630,719	2,859,650
Liabilities		234,653	507,572
Reserves		2,396,066	2,352,079
Income			
	Membership dues	178,351	167,534
	Donations & Corporate grants	716,890	567,138
	Income on congress	131,541	546,298
	Bank interest	275	1,825
	Journal royalties	81,361	59,697
	Contribution IJS Editorial Office	109,340	107,634
	Other income	17,835	0
Total of Income		1,235,593	1,450,126
Expenses			
	Operational costs	417,058	369,624
	WS Academy	104,138	98,238
	Awareness & Advocacy	166,738	276,996
	Capacity building	50,000	46,007
	SSO project	0	0
	IJS Editorial office	109,785	96,337
	Future Leaders	174,469	124,987
	Journal subscriptions	30,217	33,975
	WSO projects	151,239	88,678
	WSO grants and scholarships	0	89,700
Total of Expenses		1,203,644	1,224,542
Result for the year		31,949	225,584
	Reserves brought forward	2,352,079	2,126,495
	Reserves carried forward	2,384,028	2,352,079

Executive Committee and Board of Directors



Group photo of Board Members Meeting in Singapore.

This year, Professor Sheila Martins took over the Presidency from professor Marc Fisher at the World Stroke Congress in Singapore in October 2022.

In 2022 WSO held its regular elections for the WSO Board of Directors and WSO Executive Committee, which will serve during the period 2022-2026. Nearly 1000 WSO members placed their votes.

The Executive Committee and Board of Directors is composed of outstanding and committed individuals, representing all spectrums of stroke prevention, care and rehabilitation from across the world. 10 board members are representing stroke support organizations and 10 are representing scientific organizations.

The 2022 – 2024 Executive Committee and Board of Directors are shown below.

WSO executive Committee members

President, Sheila Martins, Brazil
President-Elect, Jeyaraj Pandian, India
Vice President, Craig Anderson, Australia
Vice President for SSOs, Michelle Nelson, Canada
Immediate Past President, Marc Fisher, USA
Treasurer, Valeria Caso, Italy
Secretary, Deidre De Silva, Singapore
Member at Large, Gustavo Saposnik, Canada
Member at Large SSO, Gloria Ekeng, Nigeria
Member at Large, Gisele Sampaio, Brazil
Ex-officio Member, Michael Brainin, Austria
Ex-officio Member, Hugh Marcus, Editor of IJS, UK

WSO board of directors

Individual members

Sub-Sahara Africa, Middle East/East Mediterranean
 Mayowa Ojo Owolabi, Nigeria
 Farah Al Eisa, Saudi Arabia
 Caleb Ademola Gbiri, Nigeria
 Maria Khan Junaidi, Pakistan
 Babak Zamani, Iran

Americas

Luciano Sposato, Canada
 David Liebeskind, USA
 Cheryl Bushnell, USA
 Sean Savitz, Canada
 Bruce Ovbiagele, USA

Europe

Philip Bath, UK
 Mirjam Heldner, Switzerland
 Atte Meretoja, Finland
 Francesca Pezzella, Italy
 Stefan Schwab, Germany

Asia/Oceania

PN Sylaja, India
 Epifania Collantes, Philippines
 Keun-Sik Hong, South Korea
 Kazuo Kitagawa, Japan
 Andrew Lee, Australia
 Anna Ranta, New Zealand
 Ivy Sebastian, India
 Candice Delcourt, Australia
 Kazu Toyoda, Japan

Scientific Societies

Hrvoje Budincevic, Central and Eastern European Stroke Society
 Timothy Kleinig, Stroke Society of Australasia
 Thorsten Steiner, European Stroke Organization
 Patrik Michel, Swiss Stroke Society
 Roland Veltkamp, German Stroke Society
 Gord Gubitza, Canadian Stroke Consortium
 Karen Furie, American Stroke Association
 Teruyuki Hirano, Japan Stroke Society

Stroke Support Societies

Anita Arsovska, Macedonian Organization For a Fight Against Stroke
 Arlene Wilkie, Stroke Alliance For Europe
 Arvind Sharma, Brain - Heart Foundation
 Rita Melifonwu, Stroke Action Nigeria
 Rita Krishnamurthi, Stroke Central New Zealand
 Lisa Murphy, Stroke Foundation, Australia
 Yusuke Yakushiji, The Japan Stroke Association
 Juliet Bouverie, UK Stroke Association

Co-opted members

Liping Liu, China
 Kay Sin Tan, APSO

**Join us
and deliver a
world free from
stroke**

ACT NOW!

By making a donation on:

<https://www.world-stroke.org/about-wso/make-a-donation>

**By using the WSO advocacy Toolkit to support
your local Stroke Advocacy Events:**

<https://www.world-stroke.org/world-stroke-day-campaign/world-stroke-campaign/advocacy-toolkit>

**By using the Global Stroke Guidelines and Action Plan to
establish and implement stroke systems of care globally:**

http://www.world-stroke.org/images/GSGAAP/Global_Stroke_Guidelines_and_Action_Plan_All_in_one.pdf

**By becoming our members and joining
our global team to fight against stroke:**

<http://wso.multiregistration.com/>

**By learning and promoting the Global Stroke Bill
of Rights to stroke care providers and governments:**

<https://www.world-stroke.org/world-stroke-day-campaign/world-stroke-campaign/global-stroke-bill-of-rights-campaign>

**By marking your dates for the
World Stroke Congress 2023:**

<https://worldstrokecongress.org>



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@intjstroke



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LinkedIn**



**Follow us on
YouTube**



**Check out
our Website**

<https://www.world-stroke.org/>
(and sign up for updates)



Contact us

admin@world-stroke.org

one voice

One World Voice for Stroke



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Organization**

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