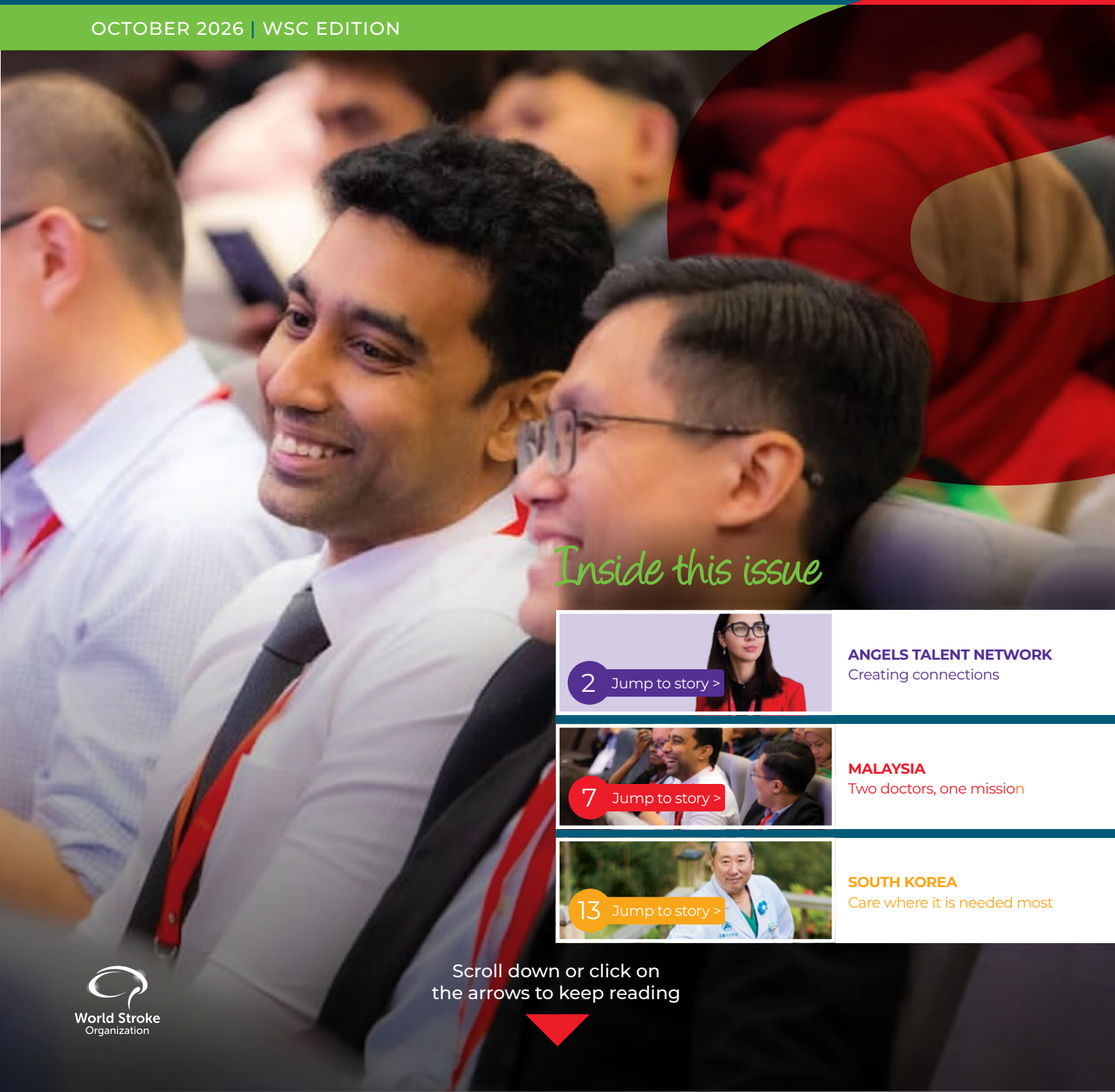
The ANGELS Journey

CELEBRATING angels 10 YEARS

OCTOBER 2026 | WSC EDITION



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ANGELS TALENT NETWORK
Creating connections

MALAYSIA
Two doctors, one mission

SOUTH KOREA
Care where it is needed most

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World Stroke Organization

Talent Is Not Enough

Welcome

to the WSC edition of The Angels Journey.



Over the past ten years, Angels has introduced me to some truly remarkable people.

Young neurologists transforming stroke care in hospitals where change once seemed impossible.

Nurses leading quality improvement projects while balancing clinical responsibilities and family life.

Researchers challenging long-held assumptions.

EMS professionals optimizing systems for the benefit for a minority of their patients.

People who see a problem and simply refuse to let it go.

Many of those stories appear in this edition.

There is Dr Dimakatso Makwela in South Africa, helping build stroke systems in some of the busiest hospitals on the continent.

Dr Abror Abdullajonov, who returned to Uzbekistan determined to bring a miracle home and is now helping reshape stroke care across an entire country.

Dr Deise Catamo in Mozambique, whose vision and determination have already helped save lives and whose ambitions for her country are only just beginning.

There are young leaders in Ukraine, Algeria, Ghana, Malaysia and many other places who remind us that leadership is not something you wait for – it is something you choose.

As I read their stories, I was reminded of a simple truth.

Talent is not enough.

Talented people often need something more.

They need confidence.

They need mentors.

They need opportunities.

They need exposure to new ideas and different ways of thinking.

Most importantly, they need a community.

Because when talented people connect with other talented people, extraordinary things start to happen.

One of the great privileges of working in Angels is that we get to meet extraordinary people long before the rest of the world knows their names.

We see young physicians leading change in hospitals, young nurses reimagining systems of care, young EMS professionals rewriting the script, and emerging leaders from every corner of healthcare building communities that will shape the future of stroke care for generations.

That is why I am particularly excited to use this edition to introduce the **Angels Talent Network.**

The Angels Talent Network is built around a simple idea: talent exists everywhere, but opportunity does not.

The Angels Talent Network will be a global community dedicated to identifying, connecting and empowering emerging stroke leaders from around the world. Our ambition is simple: to help talented individuals gain something Angels is uniquely positioned to provide, namely access to an international network of mentors, experts, peers and opportunities that can accelerate both personal growth and system-wide change.

ANGELS Stroke HEROES | **Inspiring** the global stroke community

Click here to listen now!

The Angels Initiative

The Angels Initiative is a healthcare intervention dedicated to improving stroke patients' chances of survival and a disability-free life. Since 2016, an estimated 16 million patients have been treated in over 10,000 Angels hospitals worldwide, including more than 1,400 new stroke-ready hospitals established across the world with the help of Angels.

Find out more by visiting **angels-initiative.com**

Through mentorship, international exposure, speaking opportunities, networking, storytelling and leadership development, we want to help create connections that would otherwise never happen. Because one thing this edition demonstrates very clearly is that transformation rarely happens in isolation.

The Sub-Saharan Africa Stroke Mentorship Program reminded us that learning travels in both directions. Mentees gained confidence and leadership skills, while mentors gained a deeper understanding of providing stroke care in resource-limited settings. Both left richer than when they started.

The stories about Angels Regions in Indonesia, Croatia, Kazakhstan, Madeira and Latvia reinforce that theme. None of these Angels Regions were built by individuals working alone. They were built by communities connected through a shared purpose, learning from one another and moving forward together.

That is ultimately what the Angels Talent Network is about.

Not creating stars.

Creating connections.

Because behind every successful stroke leader there is invariably a mentor, a colleague, a friend, a champion or a community that is fueling their resolve.

As we celebrate ten years of Angels, I am filled with optimism about what comes next. Not because of the systems we have built, but because of the people who will build what comes after them and us.

The future of stroke care is already here.

It is a life-saving protocol in Mozambique.

It is leading a team in Ukraine.

It is building networks in Malaysia.

It is inspiring change in Algeria, Ghana, Uzbekistan, and South Africa.

And I cannot wait to see what happens when their talent, passion and ideas converge within a single network.

Welcome to the Angels Talent Network.



Jan van der Merwe
Co-Founder & Project Lead
The Angels Initiative

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Dimakatso Makwela

The one who leads the way

Come on a journey from a village in rural Limpopo to an academic hospital in the fast-beating heart of Johannesburg, where Dr Dimakatso Makwela is leading the charge towards better stroke care.

TRADITIONAL South African names often carry deep meaning, reflecting character, social identity, and a family's gratitude and hopes for a child. In Sesotho, for example, a language spoken by millions in southern Africa, Thabo means "joy", Lesedi means "light", and Palesa means "flower".

Then there is Dimakatso – a name meaning "surprises", and sometimes "miracles" – which Dr Dimakatso Makwela agrees suits her story. It captures an unexpected journey from a village in rural Limpopo to an academic hospital in the fast-beating heart of Johannesburg, where Dr Makwela has headed the department of neurology for the past two years.

Her second name, Sethepele, derived from roots meaning "the one who leads the way", feels no less prescient. For almost four years, Dr Makwela has led the charge towards better stroke care in two of the biggest teaching hospitals in South Africa.

An eye-opening Angels Day in December 2022 introduced her to a future ally, Angels consultant Wendy Mandindi, and sparked a vision for a stroke service at Chris Hani Baragwanath Academic Hospital in Soweto.

Bara, as it is popularly known, is the largest hospital in Africa and the southern hemisphere, and among the largest in the world. Spread across about 173 acres and 429 buildings, it has more than 6,000 staff members, including specialists across a wide range of disciplines.

"Bara had all the specialists, but no system for stroke care," Dimakatso says. Although doctors were interested in establishing a stroke service, figuring out how to work together was a challenge. Dimakatso, who had arrived at the hospital as a newly fledged neurologist at the height of the Covid pandemic, felt embarrassed by its failure to manage acute stroke.

> "An educated public can advocate for themselves. **When people are informed, attitudes change.**"

"Stroke is the easiest of all neurological diseases to diagnose and treat," she says. And yet patients, including young stroke survivors, were being sent home with life-changing deficits – often to wait for death at home.



The idea that with a stroke nothing can be done, remains widespread, especially but not only in hospitals far from the cities. Patient education is therefore very important, Dimakatso believes. "An educated public can advocate for themselves. When people are informed, attitudes change."

With Wendy's support, a multidisciplinary team was created, a stroke phone designated for prenotification, a pathway established that bypassed the chronically overcrowded emergency department, and high care beds secured for recovering stroke patients. In 2024, with the stroke service at Bara still short of realizing its potential, Dr Makwela was promoted to head of neurology at Charlotte Maxeke Johannesburg Academic Hospital, where the cycle began anew.

The one who leads the way

"Charlotte" is one of three teaching hospitals associated with the University of the Witwatersrand, a top public research school ranked within the top one percent of universities worldwide. The hospital was named for another stubborn Limpopo-born woman, a social and political activist who dedicated her life to the struggle for women's rights and equal access to education.

She'd have made a fitting role model for teenage girls attending Makgoka High School in a small settlement near Moria towards the end of the 1990s.

Dimakatso had begun her schooling in the neighboring province Mpumalanga where her mother, then a young widow and rural school teacher, had sent her son and five daughters to live with their grandmother in a house teeming with cousins and aunts. She was an exemplary student who everyone said could someday become a doctor.

She and her Makgoka High classmates pored over prospectuses sent for from universities, and mailed countless applications from the local post office. The dream of becoming a doctor had a downside – it would take an eternity. Dimakatso's classmates would be driving their own cars long before she got to the end of the traditional six-year undergraduate degree.

But the University of Free State offered a compact curriculum that allowed students to enter the workforce a year earlier, and at 17 Dimakatso moved to the Free State provincial capital Bloemfontein, where she was due for a culture shock.

She had never before lived in a mixed-race environment, nor spoken English outside the classroom, she recalls. In challenging surroundings where kindness mattered, Dimakatso gravitated towards doctors who showed empathy to both patients and students.

"The nicest doctors, the ones who knew how to teach, were neurologists," she says. "Neurology stole my heart."

Destined to be here

Your beginning doesn't determine where you end up in life.

That was the message Dimakatso carried into a motivational talk at her mother's old village school, where there was general disbelief that such modest surroundings could have produced someone as miraculous as a neurologist.

Neurology is a scarce skill in South Africa. There are only 277 neurologists registered with the Health Professions Council of South Africa, less than 20 percent of whom work in the public healthcare sector where more than 80 percent of South Africans receive medical care.

Burnout in South Africa's public hospitals is a severe, systemic crisis affecting a majority of healthcare workers. The key to sustaining care, Dimakatso suggests, is to meet each patient as if they were the first – not as another face in an endless stream. "You have to imagine this was your relative. You have to give your best to every individual, because every new person deserves the same opportunity."

It's a conviction Charlotte Maxeke would've recognized and quietly claimed as her own.

"I am destined to be here," Dimakatso says. It is here, amid staff shortages, aging infrastructure, and long queues and packed corridors, that she can really make a difference.

"There's a lot of pressure and politics. In a private hospital, you ask for what you need: here you have to fight to achieve anything at all. That's when you need someone who says, I'll do it."



Dr Dimakatso Makwela with her mom, Mrs Jeminah Makwela.

Oleksandra Holod

Swimming in the deep end



Where the water is deepest is where you will find young neurologists like Dr Oleksandra Holod – leading teams, inspiring others, and driving change.

"SHE'S A SUPERHERO," is how Angels consultant Tamara Zabashta introduces Oleksandra Holod, a neurologist who at 28 heads up the stroke unit at Kamianets-Podilskyi City Hospital, a triple diamond hospital located in one of the first Angels Regions in Ukraine.

Kamianets-Podilskyi is, officially, one of the 'seven wonders of Ukraine', so designated for its architectural heritage, fairytale atmosphere, and large number of monuments crowded onto a rocky island in the embrace of the Smotrich River. It makes an attractive backdrop for Oleksandra's pictures on Instagram. But when you swipe left, the more to admire her leaning-to-classical personal style, or catch another glimpse of a favourite red suit, you frequently land on a carousel of facts and research on topics ranging from fibromyalgia to headaches.

The balance between professional responsibilities and personal life remains ever elusive.

There's also the fact that Oleksandra is a natural teacher. It was she who in 2023 initiated the creation of an Instagram account for the Ukrainian Stroke Medicine Society (UTIM) as a platform for sharing information about stroke, and then, with fellow young neurologists Iryna Sheredko and Yuliia Mykolaienko, launched a public educational project, kNOw_STROKE.

She's a highly effective speaker on quality monitoring, a topic that



resonates with her love for statistics and analysis. She has created detailed step-by-step instructions to simplify the data submission process, and even Tamara has on occasion turned to Oleksandra for help with navigating RES-Q website updates.

"She is excellent at showing why quality monitoring is needed and how it helps," Tamara says. "She's an inspiration to people. When she's on stage, everyone listens."

It's a kind of magic

Oleksandra was born in this beautiful city, which she loves. She left to study medicine in Lviv four hours away, dreamed for several years of becoming a surgeon, briefly considered quitting medicine altogether, and finally returned to Kamianets-Podilskyi as a newly-wed neurology resident at the same hospital where she now works.

Medicine had been her second choice – she'd hoped to parlay a love of chemistry into working in the cosmetics or perfume industries – and she became a neurologist through circumstance.

In 2021, residencies were rare even though she had graduated with honors, and, since there were two young doctors Holod in the family, her choice of specializations was further restricted by having to find a pair of jobs in the same city.

But early on in her internship, Oleksandra watched a stroke patient make a remarkable recovery after treatment with thrombolysis. It was a moment that changed the patient's life – and hers. Not many medical interventions produce such life-saving, symptom-reversing results, or can make you feel almost like a magician, she says.

Besides the potential for a dramatic recovery, what Oleksandra liked about stroke neurology was the teamwork – the satisfaction of each person knowing exactly what to do and professionals from many disciplines laboring together towards a common goal. But leading such a team isn't easy when you're still only in your twenties.

Oleksandra now fills the all-consuming role of managing a high-performing stroke center in the city's primary municipal healthcare facility. "It's a lot of work, and a lot of patients," she says.

The hospital director at Kamianets-Podilskyi City Hospital who put her in charge of the stroke unit is a believer in the power of young people to effect change, and presumably also in Oleksandra's ability to succeed as a young leader.



Her active commitment to self-development and constant learning has helped Oleksandra earn the trust of her more seasoned colleagues, so decisions made by the team are ideally the result of knowledge combined with experience.

> **It's an inspiration** when you're tired with a lot of patients, to hear from people with **different ideas.**

A motto helps her stay in touch with her goals – "If you want to make a change, start with small changes yourself." It's still hard. "There are many challenges," she says truthfully.

Tired with a lot of patients

For young neurologists in Ukraine, the establishment of UTIM in April 2022 has helped mitigate the difficulty of connecting with likeminded colleagues. It also gives them access to a professional network they can tap into for advice and support.

"If you have trouble and want to ask questions about a patient, you can text or call colleagues in other cities and ask for feedback," Oleksandra says. "It's an inspiration when you're tired with a lot of patients, to hear from people with different ideas."

'Tired with a lot of patients' is a reality for many young specialists in wartime Ukraine. Since the Russian invasion four years ago, many specialists have been drafted into the military, and some have lost their lives. Others have moved abroad.

The result is a lot of young and weary superheroes flirting with burnout and punching above their weight.

It's the reason why, when you ask Oleksandra what inspires her, the unexpected but also unsurprising answer is 'rest'.

Weekends are opportunities for travel, photography and reading, spending time with her husband, a cardiologist and young poet, and "feeling his support". After such a weekend of rest, she feels reinvigorated, with renewed energy for that most grueling of tasks – choosing change and leading the way to something better.

Amina Temacini

The race against time



This fearless Algerian doctor brings a sense of adventure and an open mind to providing better outcomes for stroke patients.

DR AMINA TEMACINI doesn't walk: she runs. So fast, her students are left chasing her stride. Her goal is the same as her reward – the feeling of happiness that comes with changing someone's life.

Speed is in her nature. Her father, a sports teacher, was once the Algerian champion over 400 meters. Her brother, Sief El Islem Temacini, is a former elite track and field athlete who was the African champion in the triple jump.

Her mother gave her a head for heights. "She taught me that dreams have no boundaries, and that no summit is beyond the reach of those who dare to climb it."

"That's why I love a challenge," the intensivist at Béni Messous University Hospital in the Algerian capital says. "I'm not a doctor who waits, or asks questions slowly."

She believes that "specializations choose us" and loves critical care medicine with its make-or-break moments, its crisis decision making, and the demands upon the sharpness, clarity and speed of one's mind.

Also in her nature is the impulse to help. It's what drew her to medicine – and why, six years ago, a single night shift dramatically altered the prospects for stroke patients at Béni Messous University Hospital.

At the time, patients with stroke were routed to a neighboring hospital with a dedicated neurology department but, due to the city's traffic congestion, often got there



too late for life-saving treatment. This was also the fate of a young stroke patient, and then another, both arriving during the night shift in question.

"I was frustrated that I could do nothing for them," Dr Temacini says. "I said to myself, this isn't right."

The night marked a turning point and the start of what she describes as her adventures in neurovascular care.



A race against time

Already familiar with thrombolysis from her experience using it in cases of myocardial infarction, Dr Temacini read everything she could about treating patients with acute ischemic stroke. Then, because there were questions her reading couldn't answer, she went to Paris to learn about stroke at the Sorbonne University, returning to Algiers after a year to train her staff and colleagues.

Since 2020, Dr Temacini has trained 1,000 residents, interns, students, nurses and even security guards to ensure that stroke patients arriving at Béni Messous University Hospital take the shortest possible route to the emergency corridor designed to prioritize their care. As a result, 100 patients have been given a second chance at life.

She also trains primary care doctors who practice in Béni Messous commune, so more patients will reach her hospital in time, and her awareness journey extends to television and radio appearances, as well as to urging doctors in other specialties to devote two minutes of each consultation to teaching patients the warning signs of stroke.

Her doctoral thesis, which in 2024 earned her the title of Associate Professor in Anesthesiology and Intensive Care, is further evidence of her deep engagement with stroke: it examined risk factors for mortality among acute ischemic stroke patients at her hospital over the two-year period until December 2022.

So prepare to be surprised by her clinical role at Béni Messous hospital, where, since 2019, she's been head of the Anti-Pain and Chinese Medicine Unit, an oasis of soft, soothing music set in a flower-filled garden, dedicated to the care of patients suffering from chronic pain. It seems a world away from the race against time to save lives from stroke.

"We try to create a peaceful and welcoming environment where patients can, for a moment, forget that they are in a hospital," Dr Temacini says. "We want the environment to feel calm and comforting, helping patients to feel more relaxed and at ease during their care."

Care is grounded in a multidisciplinary approach that combines pharmacological treatment with non-pharmacological therapies, including acupuncture, she explains.

A fearless mind

Her interest in Traditional Chinese Medicine developed from her scientific curiosity and her open-minded approach to medicine, Dr Temacini says. She came upon it almost by chance, but became increasingly interested in its philosophy and holistic approach to the patient.

She says, "Medicine has always been part of my family environment, as my sister is a nephrologist. This has contributed, in its own way, to my lifelong interest in medicine and in the different ways we can care for and help patients."

She completed four years of training in Traditional Chinese Medicine at a French school and has a diploma in acupuncture, which can be helpful for alleviating pain and improving overall well-being, she says. They also use it to help manage certain side effects experienced by patients undergoing chemotherapy and radiotherapy.

> "I want them to remember that **I was human with my patients,** that I did what I could to change their lives"

"My medical background is primarily rooted in conventional, evidence-based medicine," Dr Temacini says. "I see Chinese Medicine as a complementary approach rather than a replacement for modern medicine. I believe that the most important thing is to keep an open mind while maintaining a critical and scientific perspective.

"For me, the goal is always to find the best possible solutions for each patient, according to their individual needs and circumstances. This is also what led me to become interested in the potential role of acupuncture in pain management and, more broadly, in neurovascular care and stroke rehabilitation."

An open mind is usually also a fearless mind, and Dr Temacini confirms that fear is no barrier to her desire to "leave a mark on humanity".

She wants to be remembered for having had "a truly wonderful adventure, a very nice story," Amina says. "And for humanity. I want them to remember that I was human with my patients, that I did what I could to change their lives."

And that she ran as fast as she could.



Dr Deise Catamo

'I know why I am breathing'



The WSO Future Leaders, with Valeria Caso in Perugia, Italy.

One of just 12 neurologists in the Southeast African country of Mozambique, Dr Deise Catamo has shown how simply organizing what you have saves lives. Her next goals are as big as her dreams.

DR DEISE CATAMO was a neurology resident at Maputo Central Hospital when her maternal grandmother, Mrs Rossana Suleimane, suffered a stroke in her sleep, (wake up stroke). When she received a call at the hospital to say grandma wasn't speaking, Deise instructed her family to rush Mrs Suleimane to the hospital where her professor and mentor, Dr Elder Lorenzo Rosales, confirmed an ischemic stroke.

FEarly recognition meant treatment could start right away.

Intravenous thrombolysis is generally not available in Mozambique hospitals, so Mrs Suleimane's treatment centered on the careful management of her blood pressure, temperature, and blood glucose levels.

Deise spent the night by her grandmother's bedside. As she watched over her, a troubling thought took hold: "She is lucky, she has me, and I am here. What about the people who don't have me, what do they do?"

She answered that question in 2022 when, in the final year of her specialization at Portugal's University of Algarve, she embarked on a PhD in stroke. Her mission was clear: to understand the occurrence of stroke in Maputo and identify the factors that determine patient outcomes.

The result was Mozambique's first standardized stroke treatment protocol, formalizing many of the principles that had guided her grandmother's care. The goal was to prevent complications during the acute phase of stroke by organizing and optimizing the resources already available.

The protocol was adopted across Maputo, and stroke mortality fell by 20 percent in a single year.

'Do not fear no as an answer'

"It's a dream, a snowball," Deise says, trying to explain how at 36 she has come to define stroke care transformation in one of the world's poorest countries. "I don't know how I got here."

But there's a lot to read between the lines of this piece of advice: "Do not fear no as an answer."

The no's have come from policy makers, government officials, and the gatekeepers of scientific journals. But Deise doesn't linger outside closed doors – she would rather talk about the yes's that got her this far.

To begin with, there was the yes from Eduardo Mondlane University where she studied medicine, began her residency, and thrived under the mentorship of Prof Alberto Damasceno, leader of the medical faculty's clinical cardiovascular research unit.

Next, there was a big yes from the University of Algarve in southernmost Portugal where she started her doctoral studies even before she'd completed her residency.



Deise with her paternal grandmother, Mrs Raufa Catamo. Below: Deise's parents with her brother, Yuri.

A decisive yes came from Professor Hipólito Nzwalo, a Mozambique-born neurologist, stroke researcher, and director of Algarve University's PhD Program in Clinical and Translational Medicine. In him, Deise



Deise and her mentor, Professor Albertino Damasceno. Left: The family with Deise's maternal grandfather, Luis Rijo.

saw "a brilliant man, I wanted to be like him".

There was a significant yes from her PhD funders, the Schlumberger Foundation, whose Faculty for the Future program aims to build a community of female role models in STEM.

There was a yes from the African Stroke Organization of which Deise is a founding member and where she serves on the steering committee.

A yes from the World Stroke Organization where Deise is a cohort 3 participant in the Future Leaders Program.

And a forward-looking yes from former WSO president and global stroke reformer Prof Sheila Martins who is supervising her studies in vascular neurology, and who, with Dr Ismália de Souza, supports efforts to develop a collective of Portuguese-speaking African stroke doctors.

Educating Deise

Now you have met Deise's professional network, let us introduce the people closest to her heart. She was raised in Maputo with her brother, Yuri Catamo, whose own brilliant career has taken him to the Netherlands where he works for a global powerhouse. Her strongest connection is with her mother, Sandra Rijo, daughter of Rossana Suleimane and the late Luis Carreira Rijo, the grandfather who taught Deise to "be who I am, to be decent and respect others".

Deise describes her mother as her mirror: she wants to honor her but not repeat a sometimes-ill-starred story.

An asthmatic child, Deise was frequently in hospital where she remembers seeing "angels helping people and helping me". Her desire to someday become an angel herself was reinforced at the age of four by a toy stethoscope – a gift from Raufa Catamo, mother of Deise's father Gulamo Catamo – with which the family pets were regularly examined. Her 11-year-old son Danill Vaz completes the circle around her.

Deise's education reads like a map of Mozambique's struggle for freedom. She attended Escola Primária Completa 3 de Fevereiro, whose name honors the men and women who sacrificed their lives for the country's liberation and independence. Her secondary school was named after Francisco Manyanga, a resistance fighter with the Mozambique Liberation Front, Frelimo. Her university bears the name of Frelimo founder, Eduardo Chivambo Mondlane.

An important chapter in her education came at Médecins Sans Frontières (MSF), a global medical humanitarian organization that delivers emergency aid to people affected by armed conflict, epidemics, natural disasters, and exclusion from healthcare. It was here she encountered some of medicine's most complex patients including people living with multidrug-resistant tuberculosis and discovered her love for research.

> "A stroke unit is **the next priority,** but the dream is bigger still."

Deise joined MSF as a research clinician in 2017 and was soon promoted to research coordinator. "At MSF I grew up a lot professionally and personally," she says. "I learnt to understand that patients were not only their conditions. Were they mothers or fathers? Could they eat? Who was waiting for them at home?"

The answers changed the way she saw the world. But when she passed her entrance exam and was accepted into neurology, Deise traded a comfortable life for a dream.

'I know why I'm breathing'

The reduction in stroke mortality from 50 percent in 2024 to 30 percent in 2025, simply by using what they have, offers a glimpse into what may be possible. The recognition, finally, by the Mozambique Ministry of Health, of stroke as a priority now unlocks new opportunities to strengthen stroke services, expand training, and give life a chance. A stroke unit is the next priority, but the dream is bigger still.

Believing that change starts with policy, Deise favors a top-down strategy to change outcomes for her country's 30 million people and deliver her vision for better stroke care in Mozambique, in Africa, and all around the world.

She has discovered a love and a gift for policy and advocacy, because they turn individual resolve into systems others can depend on.

"I am very happy and lucky to know why I am breathing," Deise says. "A lot of people don't know why they are alive."

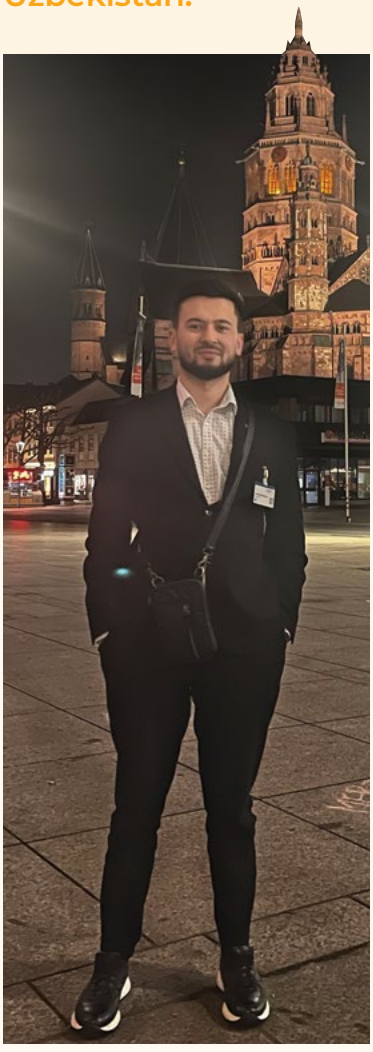


Clockwise from top left: Mrs Rossana Suleimane. Danill Vaz. Deise with her father, Gulamo Catamo. With her maternal grandmother, Mrs Rossana Suleimane.

Dr Abror Abdullajonov

Bringing a miracle home

While studying abroad, endovascular surgeon Dr Abror Abdullajonov witnessed a stroke patient's recovery as the result of thrombolysis and thrombectomy and made up his mind to bring the miracle home to Uzbekistan.



IN 2022, Abror Abdullajonov, then a 26-year-old resident in the emergency department of an academic hospital in St Petersburg, wasn't getting much sleep. Money was tight, so the future endovascular surgeon survived by working as a nurse in the ICU, which meant spending close to 24 hours a day in the hospital.

He was there on account of his mother.

When he was growing up, Mrs Abdullajonova, a caregiver, knew in her heart that Abror was destined to become a doctor. He, on the other hand, was more interested in mathematics and physics, and in earning the money their family needed.

But his mom could only afford biology and chemistry classes.

"It was something she felt in her soul," Abror says, and out of respect for his mother he bowed to her wishes.

One day when Abror was on duty in the hospital's emergency department, a grueling shift in the ICU behind him, a suspected stroke patient was brought in with symptoms that included aphasia and paralysis. During treatment with thrombolysis, this patient began to show signs of recovery. He was referred for mechanical thrombectomy, which resulted in him regaining his speech and mobility.

Though exhausted, the young doctor understood that he had witnessed a miracle.

And he had a question: "Why, in my country of almost 40 million people, did we not have such treatment? Why were we not giving life a second chance?"

It was the birth of an idea, Abror says. "When I come back from my residency, I would bring the miracle home."

Three years later, on 1 May 2025, he arrived home with the goal to establish a stroke service in Uzbekistan. To this end, he had to create a community of likeminded people, and become a thorn in the flesh of the local neurology fraternity. He launched the Instagram-based stroke transformation collective StrokeTeamUz on 16 May. The first StrokeTeamUz seminar took place in Tashkent two weeks later. In photographs from the second seminar on 31 July, Abror is flanked by Angels consultant Lev Prystupiuk, who is grinning from ear to ear. Abror's mission to bring a miracle home had found a formidable friend.

Making waves

In August of 2025, something important happened. To understand just how significant it was, one needs to be reminded that under Soviet rule there had been no bad news. Fearing that admitting failures would expose weakness, officials simply refused to admit anything was less than perfect.

But in 2025, after analyzing data on death and disability in Uzbekistan, the office of President Shavkat Mirziyoyev recognized the impact of stroke, and the failure of the healthcare system to deliver an adequate stroke service. Further investigation showed that there was no unified practice guidance for treating stroke, and a lack of compliance with international guidelines.

Stroke care needed a reformer, and who better that someone who had already shown the courage to challenge established methods and beliefs, and who was already building a community of young physicians who likewise desired change?

> "One month earlier, President Mirziyoyev had formally endorsed the **nationwide implementation of the Angels Initiative.**"

StrokeTeamUz was making waves and after those waves reached the president's office, Abror realized his mission now carried the expectations of his country. His idea was about to become state policy.

On 16 February 2026, a plane touched down at Tashkent International Airport carrying five Ukrainians who'd come participate in two acute stroke treatment and decision-making workshops aimed at creating future stroke centers in the Tashkent and Samarkand regions. On board were three neurologists – Dmytro Lebedynets, his younger brother Pavlo, and Ruslan Salnikov. Towering over the rest were Dmytro Hrynykha, an interventional neurologist, and Angels consultant, Lev.



Dr Abror met them at the airport. Then they headed to a working meeting with representatives of the Project Office and the Ministry of Health of Uzbekistan, to talk about developing a modern and effective stroke care system in Uzbekistan.

One month earlier, President Mirziyoyev had formally endorsed the nationwide implementation of the Angels Initiative. Presidential Decree No. 20, issued on 20 January 2026, also made provision for, among other things, a national program to combat heart attack and stroke, 100 percent provision of thrombolytics and endovascular consumables, implementation of structured clinical pathways, and large-scale professional training. In addition, the FAST Heroes stroke awareness program would be formally adopted in schools across Uzbekistan.

Faith, not fear

Just over a year after returning from his residency, 30-year-old Abror became head of the stroke services for all of Uzbekistan at the Project Office of the Ministry of Health of the Republic of Uzbekistan. The mission to bring a miracle home through an analytics-first approach of continuous education, expansion, and improvement, now seemed to have the wind at its back, but change never arrives on time.

If Abror's two-year plan isn't progressing as quickly as he had hoped, it is largely because teaching the fundamentals of modern stroke care can be difficult when some doctors believe they already know everything. Resistance to change is a challenge young physicians driving healthcare reform in many countries would recognize.

Abror's insistence on discipline and on Angels Academy training and NIHSS certification for stroke doctors isn't making him many friends, but at the risk of stating the obvious, fear isn't part of his character.

Faith is. Abror is sustained by the belief that all men must strive all their lives to leave a legacy with no thought of an earthly reward. A quote on his Instagram account (from November 2020) sums it up rather neatly: "The one who understands that he only lives once, does not take everything from life; on the contrary, he gives himself away without anything left."

Abror is holding back nothing.





Ihor Krylov

The desire to make a better world



Ihor Krylov of Ukraine's Khmelnytskyi region belongs to a paradigm-busting cohort of young neurologists who are facing down generational power dynamics and building systemic change to improve outcomes for stroke patients.

THERE are many decisive moments in this story. First, there is the 16-year-old sitting his university entrance exam, weighing his options, and deciding on a career that will allow him to help progress and people.

Next, he is placed in a hospital that needs neurologists.

In 2022, he is assigned to Shepetivka through his university placement program and moves to the city on the Huska River in Khmelnytskyi Oblast. Shepetivka is the administrative center of Shepetivka Raion, and Shepetivka Multidisciplinary Hospital, where Ihor Krylov is the youngest neurologist, is its main hospital.

In 2024, Ihor attends the 3rd Annual Conference of the Ukrainian Stroke Medicine Society, UTIM, and finds himself in a conversation with Angels consultants Tamara Zabashta and Lev Prystipiuk, and Prof Sergii Moskovko, stroke care reformer and Chief of Neurology at Vinnytsia National Medical University, which is also Ihor's alma mater.
The topic of the conversation is how to improve stroke care, and, also of particular interest to Ihor, the correct way to collect data about stroke.

> I just want to **make the place** where I live and work **better.**

Ihor is already uploading data to RES-Q, and Shepetivka Multidisciplinary Hospital has already received a gold ESO Angels Award. After he returns from Kyiv, the hospital receives two platinum awards, and that December, Shepetivka is one of three districts in Khmelnytskyi that become Ukraine's first Angels Regions.

In the first quarter of 2025, Shepetivka Multidisciplinary Hospital becomes a diamond hospital and in May 2026, Ihor travels to Maastricht to collect his hospital's fifth consecutive diamond award at ESOC.

The egg doesn't teach the hen

Don't let that seemingly unhindered upward trajectory deceive you into thinking it's easy or that Ihor is unusually lucky. Young doctors seeking to change practice in their hospitals are up against generational power dynamics pretty much everywhere, but especially in post-Soviet societies.

In the rigid hierarchy that characterized Soviet healthcare, older professors and senior physicians dictated clinical decision-making, leaving little or no room for younger doctors' fresh perspectives or the implementation of new evidence-based practices that improved outcomes.

The situation is captured in the Russian proverb, an egg doesn't teach a hen, Tamara says, recalling the outdated protocols and attitudes that were prevalent when she herself graduated from medical school in 2014.

Despite profound changes initiated by the Ukrainian Ministry of Health in 2017, it can still be difficult to bring something new, Ihor says. "Our generation is trying to cure our people of this post-Soviet trauma," he says, referring to scars left by decades of totalitarian rule – all while negotiating the fresh trauma of a grueling war.

In healthcare, the cure for the Soviet hangover has to be the determination of young doctors like Ihor who says, "I just want to make the place where I live and work better".

Aside from having been a helpful son to older parents, he cannot account for the innate desire to make a better world.

"I just live like that," he says.





Breaking the paradigm

Ihor and his generation of stroke doctors are the second line of attack. They follow in the wake of reformers like Dmytro and Pavlo Lebedynets, Mykhailo Tonchev and others.

The Lebedynets brothers were among those who broke the mold, Ihor says. "They showed that young doctors could bring something new in medicine. They're a good example for young neurologists. They broke the paradigm that only old professors and older doctors could know anything."

> I like to see **results in patients,** I don't want to see patients coming back.

Something Ihor knows without a shadow of a doubt is that quality monitoring is the key to improvement. Describing Res-Q as "an instrument for self control", he admits his insistence on the proper collection of data can annoy his colleagues.

As the primary stroke center in Shepetivka Raion, Shepetivka Multidisciplinary Hospital provides stroke services to around 300,000 people. They're increasingly seeing young people with stroke, a consequence of the extreme stress caused by war even at this distance from the combat zone. Its critical energy infrastructure and nearby military assets have made Shepetivka Raion a frequent target of Russian airstrikes and kamikaze drone attacks.

It's been a hard winter, Ihor says, particularly as damage to the power infrastructure can generate a degree of suspense around the CT scan. They're never completely certain it will work.

Most of the time it does.

What he likes about stroke is results, Ihor says. "I like to see results in patients, I don't want to see patients coming back."

His motivation is fueled by bright moments such as the 19-year-old patient who'd been brought in with hemiplegia and aphasia. "At first, I didn't think it was a stroke, I said, why do you bring me such a young patient. But when I examined him, I realized oh my god I need to do something really fast."

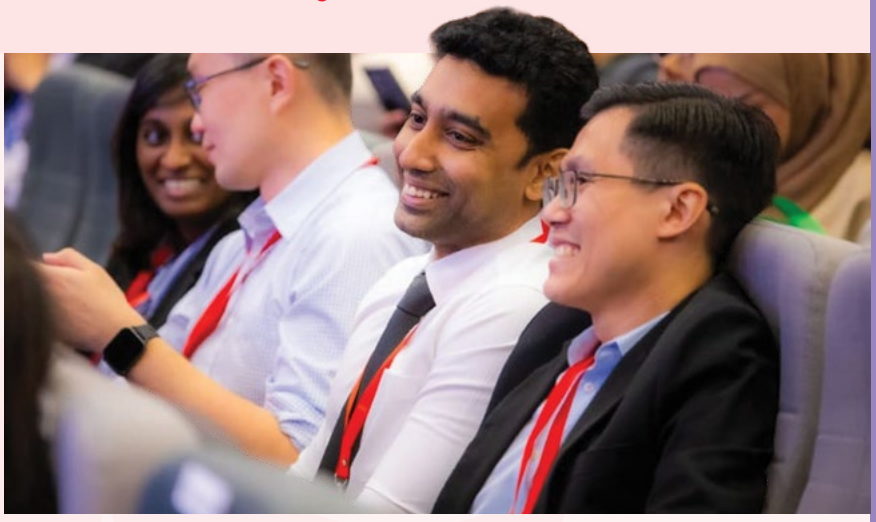
Days later, the patient walked out of the hospital on his own two feet.

"That's my main reason," Ihor says. "It reminded me why I'm here."

Dr Tan Hui Jieh and Dr Presaad Pilla

Two doctors, one mission

In this tale of two doctors, the friendship between Drs Tan Hui Jieh and Presaad Pillai acts as a powerful mirror, reflecting their shared commitment to making quality stroke care accessible to everyone.



THE SOUTH CHINA SEA lies between them, their respective regions separated by more than 600 kilometers of open water. When they both traveled to Australia to learn about stroke, their destinations were cities more than 3000 km apart.

Only one of them speaks Mandarin as his mother tongue.

Only one of them likes spicy food.

But though distance keeps them apart, Drs Tan Hui Jieh and Presaad Pillai are united by friendship, a cheerful disposition and a common mission – ensuring the best possible outcomes for stroke patients in their home states.

For Dr Tan, home is Ipoh, capital of Perak in northwestern Malaysia, about 90 minutes inland of the coastal village where he grew up. Since completing his neurology training in Malaysia and Australia, he has practiced here at two WSO Angels Award-winning hospitals. Alongside his clinical practice, he shares his expertise with district hospitals and educates the community about stroke in Mandarin, Malay and English.

> "Like Dr Tan, Dr Presaad **came home with a mission,** but his homecoming came at the end of a longer detour."

He was initially posted to Sarawak in East Malaysia where only a provincial border would've separated the two friends. But Sarawak already had an established stroke service, Dr Tan explains. "That's why I decided to return to my hometown and develop a system of care and a stroke network to serve the people of Perak."

Dr Presaad grew up in Sabah, in the northern part of the island of Borneo. Sabah was what he had in mind when in July he posted on LinkedIn: "7 years. 7 hospitals. 4 countries. Finally back home – for good."

Like Dr Tan, Dr Presaad came home with a mission, but his homecoming came at the end of a longer detour.

"Sabah is one of the states with the highest poverty rates in Malaysia,

and because of its geographical location, it is often not the first choice for doctors when deciding where to work," he explains. The doctors who do come to Sabah don't stay long, including the sole neurointerventionist in 15 years, who left after one year. It's the reason Dr Presaad decided to fill the gap himself, embarking on something of an obstacle course to become the first Malaysian neurologist to qualify as a neurointerventionist.

Having funded his own studies in India and Switzerland, the final leg of the journey now takes him to Peninsular Malaysia to get his credentials in neurointervention.

Breaking new ground comes with its own set of challenges. At least he will be within a two-hour train ride of his friend, Dr Tan.

The pillar of Malaysia

The two doctors got to know each other while studying neurology. Two years older, Dr Tan had a six-month headstart, which meant they had little opportunity to work together. They drew close nonetheless.

"Sometimes it's chemistry and you cannot really explain it," Dr Tan says. He is impressed by his friend's enthusiasm, knowledge, the dedication it took to pay for his own training and study abroad, and the courage to be a pioneer.

"I always say he's the pillar of neurology and neurointervention in Malaysia," he says. "I look up to him, and I'm glad we are good friends.

It was Dr Presaad who had a headstart in Australia, followed by Dr Tan six months later. Based in Perth and Melbourne respectively, they were attracted by the proximity, cultural overlap and the advances in stroke care. Dr Tan chose Sir Charles Gairdner Hospital in Perth, one of the busiest comprehensive stroke centers in Australia, and trained under Prof. Graeme Hankey and Dr Thomas Chemmanam. "My main needs were learning more about systems of care, prevention, and rehabilitation, every aspect of stroke," he says, adding with a smile: "I didn't go very deep into intervention – that's only for the pillar of Malaysia."

Dr Presaad, who, along with a generation of Sabah-based neurologists, had been inspired to take up the specialty by the brilliant and charismatic Dr Chia Yuen Kang, was once again looking for a teacher.

He says, "I decided to go to Melbourne because I wanted to train under a neurologist who did intervention." Studying under neurologist and endovascular neurointerventionist Prof Bernard Yan at the Royal Melbourne Hospital seemed the best way to learn, network, and unlock the door to practicing in Malaysia. "It was also a way of finding out what I was getting myself into."

He came back even more convinced than before.

One mission

Neurology rarely gives up its answers easily. It's exactly the kind of puzzle that appeals to a keen video gamer like Dr Tan. "It's like being a detective," he says. "You gather the history, examine every detail, and systematically work through the evidence until you get a diagnosis. That's why I became a neurologist."

The appeal of vascular neurology and stroke was the potential for improving the patient's quality of life.







Dr Tan with his wife Dr Tan Kai Ning and their five-year-old.

Dr Tan Hui Jieh and Dr Presaad Pilla

Continued...

Now his focus has expanded to building networks, to make hyper-acute care accessible outside the capital. "The service should not only be accessible in urban regions but to the entire population, no matter where they are," he says.



For Dr Presaad, being away from his young son was the hardest part of his studies abroad.

Across the South China Sea, Dr Presaad is driven by the same purpose. The people of Sabah shouldn't have to fly to Peninsular Malaysia for treatment, he says.

As both a neurologist and neuro-interventionist, he will oversee every stage of the patient's care. "And whatever the outcome, the entire responsibility and accountability will fall on me."

His focus is on Sabah for now, but ultimately the goal is to make optimal care available from coast to coast, especially in stroke.

The remedy for Malaysia's growing stroke burden depends on coordinated action across multiple fronts, the doctors agree. Community education. Government policy that makes stroke a priority. Funding to train more neurologists. Streamlining the path to becoming a neurologist.

Currently, Malaysia ties with Myanmar for the longest path to become a certified neurologist, requiring at least 16 years from the start of undergraduate training.

"So we are all old," Dr Presaad quips.

Legacy is a big word

At 39 and 41 respectively, they're not only far from old: their bright temperament and naturally upbeat manner make them seem even younger.

"I think we are usually very happy people," Dr Presaad says. "Of course our work is stressful, but I don't think it affects how we act and react around others."



"I totally agree," Dr Tan says. "I also think we really need to stay calm because decisions need to be made as precisely and accurate as possible in a very short period of time."

On those occasions they spend time together, they don't only talk about work, Dr Tan says. "Of course, when it comes to academic discussions, I'm usually the one asking the questions. But we talk about all sorts of things: our families, hobbies, food and, of course, eating spicy dishes. You know, adding three spoonfuls of chili to his meal. We do all the things any friends would do."

They are both fathers. Dr Tan wishes he could spend more time with his five-year-old daughter. For Dr Presaad, being away from his now-three-year-old baby boy was by far the hardest part of neurointervention training in India and Switzerland.

"It would have been easy to leave everything else behind, but being apart from my son when he was a year old was the more difficult part of the entire process."

As parents and pioneers, thoughts of legacy inevitably arise.

"Legacy is a big word," the pillar of Malaysia says.

In Perak state, Dr Tan is building his legacy one protocol at a time. The idea is to change culture, he says. "When I first came back to Ipoh, people would ask me why did you thrombolyze this patient. Now they're more likely to ask why we didn't. And this has become a culture, so things can run by themselves even when I am not around."

"Legacy is a big word," the pillar of Malaysia says. "I just hope that I build something that sort of outlasts me. So I hope I can make advanced stroke care more accessible to people in Sabah, and to the whole of Malaysia, and that I make the path to neuro-intervention a little easier for people who come after me."

More than anything, he wants his son to be proud of him when he grows up.

Their legacy is still being written, but one measure of the doctors' success is the genuine pride they take in each other. As Gloria Steinem observed, "I am so proud of you that it makes me proud of myself."





Completing his neuroinvention studies in India.



Dr Presaad with the Australian stroke team.



Priscilla Abrafi Opare-Addo

A gift from above



Priscilla Abrafi Opare-Addo of Ghana attended Angels Day in Kenya, eager to turn knowledge into experience, and learn new ways of caring for stroke patients. She would not go home empty-handed.

WHILE scouring the Angels Initiative website for training resources for her staff at Komfo Anokye Teaching Hospital (KATH), Ghanaian neurologist Priscilla Abrafi Opare-Addo noticed something she instantly knew could be a game changer. A rectangular red bag emblazoned with the Angels wing appeared in photograph after photograph – of stroke teams engaged in simulation training, gathering for a group shot at the end of a workshop, or celebrating an award.

It was a bag packed with tools to trigger and support actions critical for reducing door-to-treatment times and delivering the best outcomes for stroke patients.

Priscilla longed to get her hands on such a bag.

An example for the rest of Africa

Komfo Anokye Teaching Hospital was doing well all things considered. With a 1200 bed capacity, it is Ghana's second largest teaching hospital, located in its second largest city, Kumasi, the capital of the Ashanti region. KATH also serves as the main clinical training site for Kwame Nkrumah University of Science and Technology, Dr Abrafi Opare-Addo's alma mater.

The hospital admits approximately 1200 strokes per year, or 3 to 4 per day. An increase in the number of stroke admissions after thrombolysis was introduced in 2024 means the six-bed stroke unit is under pressure. But six



beds will soon become twenty-one in an expansion aided by the World Stroke Future Leaders Program whose support includes staff training. This model is being replicated across six more hospitals in the region. The vision is of an Ashanti regional network of stroke-ready hospitals with Komfo Anokye as the hub.

The even bigger picture is of Komfo Anokye Teaching Hospital becoming "an example for the rest of Africa to show them what is possible."

Yes, she is very ambitious, Dr Abrafi Opare-Addo says.

Solving puzzles

Raised in a middle-class Ghanaian household with a father who worked abroad, Priscilla Abrafi grew up curious and never grew out of it. She was always questioning why things couldn't be done differently, and when she embarked on a career in medicine, she brought that same scrutiny to the healthcare system.

Plans to focus on cardiology were scuppered during a neurology rotation. "Neurology was very interesting," she says. "Like solving puzzles. You start with questions and put the pieces together until it all makes sense."

Having discovered that she was rather good at solving puzzles, Priscilla embarked on her neurology residency while simultaneously studying clinical research at the Medical University of South Carolina, and caring for her newborn quadruplets – three girls and a boy.

It was a "rough patch", she laughs. If anything, it taught her that nothing was impossible.

"Nothing really scares me," she says.

'These people could not wait'

Busy though she was, Dr Abrafi had not run out of questions. Why did their stroke patients have such poor outcomes? Why didn't their hospital offer thrombolysis? How could they improve their stroke care? Were there really too many barriers in their part of the world?

> "The first step was to **establish a multidisciplinary stroke thrombolysis team** and put together code-driven protocols and algorithms."

As a doctor in Ghana you are constantly aware of how much people need your help, Priscilla says. "The little things you do make a big difference, the patients really need you."

Observing the large proportion of stroke patients among neurology patients, witnessing poor outcomes, patients dying or going home disabled to lives hopelessly altered, she felt a sense of urgency: "These people could not wait."

By 2024, the Komfo Anokye stroke program had faced down many barriers and Priscilla was becoming more hopeful that real change was possible. The first step was to establish a multidisciplinary stroke thrombolysis team and put together code-driven protocols and algorithms. The national ambulance service was brought on board and prenotification established as a key priority action. And because more than 85 percent of stroke patients arrive in private vehicles or via public transport, a massive stroke awareness campaign was launched by the KATH stroke team.

In 2025, getting to know Angels via the Future Stroke Leaders Program set Priscilla on a new course. She assembled a large stroke multidisciplinary team and used Angels resources for training. And she began to explore the potential for treating at CT rather than in the red zone of the emergency department.

Then an invitation arrived and, in February 2026, Dr Priscilla went to Kenya.

A gift from above

The Komfo Anokye delegation to Angels Day in Nairobi included two more neurologists and dedicated stroke nurse Khalib Abdulai who were all eager to turn knowledge into experience.

They were hoping to take home the latest information about acute stroke care, and new ways of doing things, Dr Priscilla says, and the case simulations were indeed eye-openers that made key priority actions such as delivering patients directly to the imaging room and commencing treatment at CT seem within reach. Seeing examples of others thriving despite challenges not unlike their own filled them with hope.

But they were also there on an important errand.

"When we started training using Angels resources we realized with a stroke bag we'd be able to thrombolyse anywhere," she says. So when the invitation to Nairobi arrived, Priscilla said to Khalib Abdulai, "Let's go talk to them and see if we can get one."

The first person they asked was Angels project lead Belén Velazquez. "She said I could email her and she could help us get one. Then at the end of the training on our way to the lobby, we ran into Mat Stolarczyk and Belén in the hallway and were introduced to the rest of the team.

"One of them asked do you have a bag and when we said we were desperate to have one, they said why not give her the one we used in the training."

The first thing she did after she got back to Kumasi was to present the bag to the rest of her team.

"This is a testament that if you dream, you have to believe," Priscilla told them. "You see, we spoke about this just a few days ago." And now here it was. A bag filled with hope – not just for the stroke patients at Komfo Anokye Teaching Hospital but for all of Ghana.



Dr Opare-Addo's quadruplets, born at the start of her residency.

Ferenc Molnár

Future perfect



Hungarian paramedic and researcher Ferenc Molnár follows a road that doesn't exist in pursuit of a future he insists upon. Now this perfectionist has delivered on a promise to quantify the impact of Angels collaboration on prehospital performance, with an analysis of over 80,000 cases.

THE difference between perfectionism and idealism comes down to how things ought to be done versus how things ought to be. The perfectionist focuses on how to do something flawlessly, whereas the idealist focuses on what to do based on their noble vision.

It's of course possible to be both, just as long as you don't expect to get a lot of sleep.

"Sleep is overrated," says Ferenc Molnár, expert paramedic and leader of research at the Hungarian National Ambulance Service, the OMSZ. Three to four hours are all that's necessary to fuel Ferenc's dedication to advancing prehospital research and restoring the scientific life of the OMSZ, scrutinizing data for opportunities to rid the system of flaws, completing his PhD in disaster medicine, and cherishing every moment spent with his two-and-a-half-year-old, Albert.

During the EUSEM Congress in Copenhagen last October, Ferenc promised members of the EMS Angels Steering Committee that he would write a good article on the impact of the EMS Angels Awards on prehospital stroke care in Hungary.

It was only once he arrived back in southeastern Hungary's "city of sunshine", Szeged, that Ferenc realized he'd given himself rather a lot to do.

> His search for a purpose in life led him to the ambulance service; it was **"love at first sight".**

One year later, the article was pending publication. Based on an analysis of over 80,000 cases, it details OMSZ performance improvement in five key areas in the four years after it adopted the quality-improvement measures recommended by the Angels Initiative, and expressed in EMS Angels Awards criteria.



Ferenc Molnár with his son, Albert.

Between January 2021 and December 2024, median on-scene time fell from approximately 21 minutes to 19, documentation of medication history rose from 29 percent to 99 percent, and onset-time recording reached nearly 100 percent after being made mandatory in 2023. Hospital prenotification improved from 11 percent to 97 percent, and direct transport to stroke-ready hospitals from 59 percent to 99,8 percent.

In 2023, Hungary became the first (and so far only) country in the world to reach diamond status in the EMS Angels Awards, in every one of its regions, a feat it repeated in 2024 and 2025. And still Ferenc continues



to look for errors and propose ways to fix them, spurred on by the idealist belief that perfection is possible.

Love at first sight

Ferenc grew up in a small town called Komló in southern Hungary. His boyhood dream of becoming a firefighter was thwarted by weak eyesight that required him to wear glasses. His subsequent search for a purpose in life led him to the ambulance service; it was "love at first sight".

Inside an ambulance car there's a different universe, he says. "It's good to be there. Every EMS worker feels the same way. It's so good to help other people. Every time I work in the ambulance car, I feel better because I am doing something for society, for someone. It's a very inspiring environment for me."

Naturally inclined to want to improve what he sees, Ferenc was initially frustrated by the absence of a research culture in the ambulance service, and by his limited ability to influence the system. The daily pressure to provide quality care to over one million patients per year left little room for research, so he began analyzing the data in his spare time, motivated by the potential for improving outcomes for a fragile group of patients. There was one fragile patient in particular he had in mind. His own father had had a stroke and, although he'd made a good recovery, Ferenc had nevertheless found a few flaws in his treatment that the perfectionist felt compelled to change and improve.

A new head of department led to a breakthrough in 2024. Dr Miklós Constantinovits did him a great favor, Ferenc says. "He said, do not care about everyday challenges, you should work only with science."

Working only with science has allowed Ferenc to complete the PhD for which he examined the usability of 3d-printed medical devices in emergency and military disaster medicine care. He has studied the use of non-invasive ventilation, fulfilled his promise to the EMS Angels steering committee with a paper on the impact of Angels collaboration on EMS quality indicators in Hungary, and trained his scrutiny on the efficiency of secondary air transport. And he has his eye on an Italian master's program in European Disaster Medicine, through which he hopes he can reduce the loss of young lives to trauma.

Idealism loves company

Those who are driven by strong principles and the goal of making a positive impact on the world, need mentors to bridge the gap between their vision for how the world could be and the reality of how to achieve it. Ferenc is grateful to two men in particular who have shaped him in this way – his close friend and namesake, Ferenc Toldi, who brought the Angels program to the OMSZ, and Dr Gábor Gőbl, an iconic emergency physician whom he describes as "the most inspiring person in the world".

"Dr Gőbl wrote the books that my generation studied from, the very foundations of our knowledge. Years later, when I began working in Budapest, I had the privilege of becoming his colleague. And that was when I truly understood what made him exceptional.

"Dr Gőbl is not only a brilliant physician – he is a true gentleman and the finest teacher I have ever had. He taught me how to think like a scientist, how to question assumptions, and how to embrace critical thinking. He taught me how to navigate among decision-makers with integrity, and how to quietly and persistently achieve my goals without losing sight of my principles."

Ferenc is interrupted for a moment by a text message from his wife, also a researcher. She wishes him luck with the interview and reminds him to collect Albert from daycare on his way home. After he arrives home, his focus will be on his family until Albert falls asleep surrounded by ambulance cars – the childhood bedroom of a future firefighter. Then Ferenc will be back at his desk, looking for errors, aiming for perfection, building his legacy out of changing "the worst possible into the best possible".

He guesses that makes him an idealist.



Ferenc (second from right) with his closest colleagues and friends, from left: Kálmán Kiss, Miklós Constantinovits, Ferenc Toldi, and László Pusztai.

Celebrating 10 years

Podcast

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Claudio Jiménez
What Love's Got to Do with It
Preserving language and, with it, the ability tell others you love them, is a driving force in Claudio's battle against stroke.



Dr Dmytro Lebedynets
A New Story About Stroke for Ukraine
Dmytro Lebedynets saw that something was missing in the middle of Europe and decided to do something.



Robert Mikulik
Ideas for a Revolution
RES-Q founder and mastermind behind RES-Q+, Robert has big ideas, some of which are changing the future of healthcare.



ICH Care Bundle
A Call to Action
Madeline Bucher and Inês Carvalho talk about the ICH Project to standardize ICH care bundle implementation.



Jan Van Der Merwe
A Decade of Angels
Angels project lead and cofounder Jan van der Merwe on the organization he and Thomas Fischer brought to life in 2016.



Dr Octávio Pontes Neto
I'm Doing What I Love
The Brazilian neurologist and godfather of the Angels Regions strategy brings innovation to the field of stroke education.



Dr Urs Fischer
The Pursuit of Unanswered Questions
When not educating the next generation of stroke heroes, the ESO president-elect looks for answers to the unanswered questions about stroke.



Valeria Caso
Stroke is Women's Work
WSO president-elect Valeria is an advocate for gender equality in stroke care, and a role model especially for young female neurologists.



Dr Francisco 'Pachi' Moniche
Transmitting Passion to Medicine
A neurologist for close to two decades, Pachi knew right from the start that stroke was what he calls "the best part".

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Dr Sandor Nardai
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Kristaps Jurjāns
In the Right Place at the Right Time

Latvian neurologist Kristaps explains how consistency earned his hospital in Riga more diamond awards than any other hospital in the world.



Nune Yeghiazaryan
Dreaming A Better Future for Armenia

For over a decade, Nune has been answering the question, if not now, then when, if not you, then who? The answers are reshaping stroke care in Armenia.



Danilo Toni
All the World's A Stage

Italian neurologist Professor Danilo Toni reflects on three decades of stroke care transformation in Italy.



Apostolos Safouris
Lessons from History

The ESO's certification tsar discusses progress towards getting stroke centers certified across Europe, and the end of the AI honeymoon.



Carlos Molina
The Human in the Loop

Carlos Molina is welcomed everywhere as a teacher about stroke and now also about the potential of AI-based technologies in stroke.



Sheila Martins
Dr Sheila Believes in You

Prof Sheila Martins has inspired a generation of young doctors who are now rewriting the story of stroke.



Aleš Tomek
Neurology Is an Action-Packed Adventure

The charismatic neurologist who is leading stroke care in the Czech Republic is also a nature photographer and an expert on birds.



Vitor Cruz
Reshaping Stroke Care in Portugal

Meet the unifying force who is reshaping stroke care in Portugal by bringing together diverse healthcare teams under a shared vision of excellence.

Mentorship master class


Tamara Zabashta, coordinator of the Stroke Mentorship Program for Sub-Saharan Africa.

Alumni of the first Stroke Mentorship Program for Sub-Saharan Africa report on a process they say offered a master class in personal and professional growth, cementing the importance of leadership, teamwork, lifelong learning, resilience, and maintaining a patient-centered approach to healthcare.


Dr Eskedar Seleshie Demessie

Dr Eskedar Seleshie Demessie

Internal Medicine Specialist
Feleghiwot Comprehensive Specialized Hospital
Bahirdar, Ethiopia

Her mentor: Dr De Vries Basson, Physician (Internal Medicine), Mediclinic Durbanville, South Africa, and Head of Internal Medicine at Karl Bremer Hospital.

ESKEDAR'S STORY:
"I think differently about leadership and change"

I was born and raised in Ethiopia. My mother is a teacher and my late father was a history and geography teacher, who later became a lawyer and a talented songwriter. My family deeply valued education, service and community engagement.
As children, my late father would regularly challenge us to learn world maps, countries, capitals and flags, inspiring us to develop a global outlook from an early age.

Beyond his professional work, he was actively involved in community development and public health initiatives. He started leading and supporting HIV/AIDS awareness and prevention campaigns in the early 2000s. He also published a magazine focused on HIV care and authored a small educational book that addressed treatment adherence, encouraging people to take their medication while maintaining their spiritual practices. In high school, I served as an editor for the magazine and helped translate articles from English into Amharic, making information more accessible to local communities

Through these initiatives, I was exposed to the healthcare sector from an early age.

I chose medicine because I was able to witness firsthand the profound impact that illness has on individuals and families, as well as the significant shortage of physicians in my community. I obtained my medical degree from Mekelle University, and completed my post graduate degree in Internal Medicine at Bahirdar University.


Dr De Vries Basson

I now serve as senior internal medicine physician at Felegehiwot Comprehensive Specialized Hospital in Bahirdar. Alongside my clinical role, I serve as department head of internal medicine and lead stroke pathway development and stroke care quality improvement initiatives, participate in clinical research and mentor junior colleagues.

Stroke is the leading cause of mortality in my hospital. Many

stroke patients don't get evidence-based care because of system challenges and resource limitations. I realized that by preparing a designated area it was possible to provide a more organized and evidence-based care that would ultimately improve stroke care, and potentially save more lives and reduce disability than individual clinical decisions alone.

I heard about the Angels mentoring program while I was attending the 5th African Stroke Organization Conference in 2025.

My mentor is an excellent person, who had been in a similar situation about 10 years earlier in his hospital, and therefore understands our realities. From the beginning, he was fully committed to making this work. We had weekly meetings and frequent discussions whenever challenges arose. Together we were able to decide on the direction that would make us successful and explore what this initiative could become.

We reviewed the need at our hospital and agreed on goals that were practical and measurable. We prioritized establishing a dedicated stroke corner as the foundation for a future comprehensive stroke unit by implementing evidence based stroke protocols, introducing NIHSS as a routine assessment tool, reducing preventable complications such as aspiration pneumonia and venous thromboembolism, developing a clinical dataset and strengthening multidisciplinary collaboration.

While we have now successfully established a functional dedicated 12 bed stroke unit, introduced standardized protocols for acute and post-acute stroke management, and conducted coaching for professionals working in the unit, our work has just started. Over the coming months we aim to continue making the unit functional, expand staff training, introduce intravenous thrombolysis, and continue building the system essential for comprehensive stroke care.

Ultimately our vision is to establish one of Ethiopia's leading comprehensive stroke centers capable of delivering internationally benchmarked stroke care.

My mentor's greatest contribution was helping me think differently about leadership and change. Rather than focusing on limitations, he encouraged me to identify opportunities, stay focused, prioritize achievable goals, identify small wins, and build from there.

His practical experience in developing stroke services, combined with his constant encouragement and feedback, strengthened my confidence and emphasized the importance of teamwork, resilience and measuring progress as we go forward.

The program has expanded my international professional network, increased my confidence to lead institutional changes, and helped my long-term vision of helping establish a comprehensive stroke center in Ethiopia, while contributing to the broader stroke revolution across Africa.



Mary Jepkemboi Kwambai

Mary Jepkemboi Kwambai

Clinical Nurse Educator in the Emergency Department at Moi Teaching and Referral Hospital, Eldoret, Kenya.

Her mentor: Dr Francisco Moniche, Head of the Neurology Department at Virgen del Rocio University Hospital and the Biomedicine Institute of Seville (IBiS) in Spain.

MARY'S STORY: *"We share a passion for saving lives"*

My journey began in Kaptilol, a remote village in the Kaptarakwa area of Elgeyo Marakwet County, Kenya. Raised by hardworking farmer parents, my upbringing was anchored in a strict Christian faith and profound generosity. In a place where material wealth was scarce, my parents taught me that true abundance is measured by what you give away.

I completed my secondary education St. Agatha Mokwo Girls High School in 1994 and in 1999 graduated from Kenya Medical Training College as a Kenya Registered Community Health Nurse.

> "My special interest in stroke care stems directly from **my roots in Kaptilol village** and my decade of **experience in the MTRH Emergency Department.**"

For the next ten years, I worked on the frontlines of healthcare in various departments, managed scarce resources, comforted grieving families, and led clinical teams with deep determination. After 10 years of service, I went back to college. I earned a Bachelor of Science in Nursing and a Master's degree in Maternal and Neonatal Health from the Moi University College of Health Sciences, Kenya.



Dr Francisco Moniche

My clinical career is defined by over two decades of dedicated service at Moi Teaching and Referral Hospital (MTRH). For the past ten years, I have anchored the high-stakes environment of the Emergency Department as a Clinical Nurse Educator, managing and teaching critical care protocols for medical, surgical, and gynecological emergencies.

My special interest in stroke care stems directly from my roots in

Kaptilol village and my decade of experience in the MTRH Emergency Department. As a young girl, I always had a deep desire to care for the vulnerable, often helping the elderly in my community. When I became an Emergency Clinical Nurse Educator, I saw firsthand how devastating a stroke can be to elderly patients and their families. Witnessing the immediate, life-changing impact that rapid triage and the FAST protocol can have on a patient's survival and recovery sparked my passion.

My goal is to ensure that no matter how remote a patient's background is, they receive immediate, high-quality, and time-sensitive care the moment they reach the hospital

I first learned about the stroke mentorship program through the Angels Initiative website and during the 2025 Angels Day in Kenya. I was prompted to apply by the urgent need to bridge the gap between advanced stroke guidelines and frontline emergency nursing.

Our very first physical meeting was a landmark moment, held in Nairobi Pullman hotel, in February 2026. Prior to this, my mentor and I had already laid a solid foundation using Zoom meetings and email exchanges to align our vision and share our core mentorship objectives. However, meeting face-to-face truly solidified our bond as a team.

My mentor, Dr. Francisco Moniche, showed absolutely no hesitation in working closely with me as a nurse. Despite our different countries, cultures, and clinical roles, we shared an immediate, mutual passion for saving lives. Together, we analyzed the specific operational needs of MTRH and mapped out precise, realistic objectives that focused on using the FAST protocol to optimize emergency triage to reduce door-to-needle times, and the FeSS protocol which drastically reduces post-stroke complications and mortality.

Beyond clinical training, Dr Moniche and I prioritized public awareness strategies, designing approaches to educate the community surrounding Uasin Gishu counties.

Initially, I was a bit nervous about the cross-cultural and multi-disciplinary dynamics. I wondered how a doctor from Spain would relate to a nurse working in Kenya, and whether our different healthcare systems would create gaps in communication or strategy.

Dr Moniche helped me navigate operational hurdles, completely transforming my perspective on change management. Whenever I felt overwhelmed by institutional resistance, he reminded me that systemic change is an iterative process that requires patience, data, and steady leadership.

He taught me to view barriers not as dead ends, but as data points to refine our strategy. Instead of demanding immediate perfection, Dr Moniche showed me how to break down complex protocols into smaller, digestible training modules for my staff.

Beyond the clinical protocols and medical sciences, this mentorship program served as a profound master class in personal and professional growth. It completely reshaped my understanding of global collaboration, operational discipline, and human connection.



Dr Dorice Lucas Shangali

Dr Dorice Lucas Shangali
Physician and coordinator of stroke care activities at Bugando Medical Centre, Mwanza, Tanzania.

Her mentor: Dr Dmytro Lebedynets, Ukrainian neurologist, head of the Stroke Center at Feofania Hospital in Kyiv, associate professor at Kharkiv National University, and founder of the Ukrainian Stroke Medicine Society.

DORICE'S STORY: *"My mentor's support quickly built my confidence"*

I was born in Rombo District, Kilimanjaro Region, Tanzania, and raised in a supportive and disciplined family. My parents placed a strong emphasis on education, hard work, and compassion for others. Growing up in such an environment encouraged me to pursue my academic goals with determination. I completed my primary and secondary education in the Kilimanjaro Region in Tanzania.



Dr Dmytro Lebedynets

My motivation to study medicine came from a personal family experience. My sister frequently suffered from illnesses throughout her childhood, and watching her struggle I realized how much skilled healthcare professionals can change people's lives. I wanted to become someone who could help patients suffering from illnesses, especially those with limited access to quality healthcare. I earned my Doctor of Medicine degree from Kilimanjaro Christian Medical College in Tanzania.

> "I wanted **guidance and mentorship on implementing evidence-based acute stroke care**, optimizing the appropriate use of these valuable and expensive medications, and **improving access** to timely treatment for more patients in our community."

Since 2024, I have worked as a physician and coordinator of stroke care activities in the neurology unit (which falls under the internal medicine department) at Bugando Medical Centre in Mwanza.

My interest in stroke developed through my clinical practice, where I witnessed the devastating impact stroke has on patients, families, and communities. I recognized that many stroke-related disabilities could be prevented or reduced through timely diagnosis, evidence-based treatment, and effective rehabilitation. This motivated me to improve my knowledge and contribute to better stroke care.

I first learned about this mentorship program through my academic role model, Dr. Sarah Matuja, who is currently a stroke care project lead in Tanzania. I also came across information about the program on the Angels Initiative website. I was motivated to participate because our hospital received a donation of thrombolytic medications for the treatment of acute ischemic stroke. Despite having these life-saving medications available, many eligible patients arrive too late from home or are referred late from other hospitals, limiting their use. I wanted guidance and mentorship on implementing evidence-based acute stroke care, optimizing the appropriate use of these valuable and expensive medications, and improving access to timely treatment for more patients in our community.

I expected to gain advanced clinical knowledge, practical guidance on stroke management, research skills, leadership experience, and professional networking opportunities with experts in stroke medicine.

My first meeting with my mentor was welcoming and encouraging. Dr Lebedynets created an open environment where I felt comfortable discussing my goals and learning needs. He was supportive, approachable, and genuinely interested in helping me develop professionally.

> “I believe my mentor **gained greater insight** into the challenges of providing stroke care in resource-limited settings.”

Together, we identified my strengths and areas that required improvement. We established realistic and measurable goals focused on enhancing my clinical knowledge of stroke, improving patient management, strengthening research skills, and expanding my professional development. Initially, I was concerned about whether I would meet the expectations of the program and effectively balance my clinical responsibilities with the mentorship activities. However, my mentor’s support quickly built my confidence.

We communicated regularly through online meetings using platforms such as Zoom or Microsoft Teams, email, and WhatsApp. We also met physically once during Angels Day in Nairobi, Kenya, in February 2026. Each online meeting lasted approximately 30 minutes to one hour, allowing enough time for meaningful discussion and feedback.

The mentorship significantly improved my confidence in stroke diagnosis and management. It strengthened my clinical decision-making, broadened my understanding of evidence-based stroke care, and inspired me to become more involved in stroke education and quality improvement initiatives.

I believe my mentor gained greater insight into the challenges of providing stroke care in resource-limited settings. Through our discussions, he also learned about the realities of healthcare delivery in Tanzania and the innovative approaches clinicians use to overcome limited resources.

Beyond clinical knowledge, I learned the importance of leadership, effective communication, teamwork, professional networking, lifelong learning, resilience, and maintaining a patient-centered approach to healthcare.



Back from left: Mateusz Stolarczyk, Dr Dorice Lucas Shangali, Dr Eskedar Seleshie Demessie, Mary Jepkemboi Kwambai, Rita Rodrigues, Belen Velazquez, Thea-Maria Leinbohm. Front from left: Dr Dmytro Lebedynets, Dr Francisco Moniche, and Dr De Vries Basson.

Lady Pohamba's extra mile





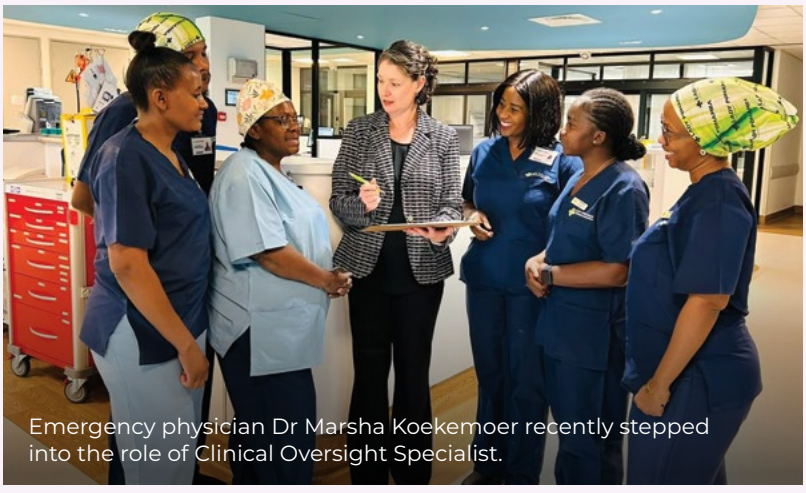
A famous author once said, "What makes the desert beautiful is that somewhere it hides a well." In one of Sub-Saharan Africa's most arid regions, we have found it – a hospital that delivers clinical excellence from a deep well of empathy, and new beginnings.

THE Namibian capital Windhoek is a city that honors its heroes. Arriving from the south on the B1 highway, for example, a left turn takes you down Michelle McLean Drive, named for the former Miss Namibia who became the country's first and only Miss Universe in 1992.

If you turn right, you will find yourself on Frankie Fredericks Street, named for a four-time Olympic silver medalist and the fastest Namibian in athletics history.

And about 850 meters down Frankie Fredericks Street, you'll arrive outside Lady Pohamba Private Hospital (LPPH), whose name honors Namibia's former First Lady, midwife and healthcare advocate Penehupifo 'Penny' Pohamba.

Already in distinguished company, once inside you will meet more exemplary individuals in the persons of clinical manager Dr Marsha Koekemoer, rehabilitation unit manager Sr Tanya Momberg, and Marelize Mentz, the hospital's marketing and relations manager who just happens to have worn the title of Miss Namibia herself.



Emergency physician Dr Marsha Koekemoer recently stepped into the role of Clinical Oversight Specialist.

Dr Marsha has been here since day one. Recruited from the Western Cape, she joined Lady Pohamba in January 2016 and for nearly a decade led the emergency center while overseeing clinical governance as the facility expanded from 130 beds to 293. Plans to move back to the Cape's famous beaches and winelands were shelved when she was invited to step into the role of Clinical Oversight Specialist this past August.

Sister Tanya was working in one of South Africa's most sought-after retirement towns, and contemplating retirement herself, when she agreed to trade the Whale Coast's mild climate and Blue Flag beaches for hot semi-arid Windhoek and 300 sunny days per year. She signed on for two years, and has stayed for 10 and counting.

Three years ago, she got invited on a field trip to rehabilitation facilities in the Western Cape, and when

Namibia's first rehab unit opened at Lady Pohamba in 2024, Sr Tanya was a natural choice to lead it. After decades on the frontlines of cardiology, oncology, surgery and the ICU, rehabilitation was an entirely new discipline, she says.

"It grabbed me," she says, "the opportunity to put something back into the community."

Having left the pageant world behind, Marelize had found her niche at the intersection of healthcare and communication and joined LPPH three years ago. The hospital's warm emotional climate is at least in part a reflection of her work; she loves being part of a journey that almost routinely goes the extra mile.

'It's precious time because it gives them hope'

Dr Marsha is LPPH's stroke champion. Already familiar with Angels before moving to Windhoek, she welcomed them at the hospital in 2017. Training and simulations have helped the team trouble-shoot pathway delays, and the only thing that now stands between them and an Angels Award is patient volume. Only about half of stroke patients reach Lady Pohamba by ambulance, and many arrive outside the treatment window.

Namibia is one of the most sparsely populated countries in the world. Its three million inhabitants are spread across a land mass larger than France and Germany combined. Communities are separated by vast distances, and almost 70 percent of the national road network is made up of gravel roads.

Adding to the challenges, the national emergency number has fallen out of use due to low public awareness, although FAST Heroes implementation has lent impetus to a campaign to reinstate 112 as the official number for all emergency services. Last year, thanks to their support for the FAST Heroes mission and the 112 campaign, Dr Marsha and Martelize were finalists in the global FAST Heroes Awards.

At the opposite end of the stroke patient pathway is where you will find Sr Tanya demonstrating the difference 10 beds can make.

The LPPH rehabilitation unit is where life begins anew for the orthopedic patients and stroke survivors who are taken under Sr Tanya's wing, their recovery supported by a customized medical and therapy program administered by a multi-disciplinary team. Team members meet early on Tuesdays to discuss patient progress, and family meetings take place on Wednesdays and Thursdays.

A stroke doesn't only change patients' lives. Their entire families experience shock, anxiety and grief, and the disruption of sudden shifts in relationship roles, and the physical demands of caregiving. The rehabilitation unit is where they will find the knowledge and support that will light their way.

> "I want people to know **we're a family, a joyous environment,** and our outcomes are phenomenal."

The education takes time, Sr Tanya says. "But it is precious time because it gives them hope."

'I thought she was hardcore'

The daughter of a nurse, Marsha Koekemoer always loved biology.

When Marsha was in grade 11, her mother took her on a tour of the gritty reality in one of South Africa's state hospitals, in a perfectly futile attempt to talk her out of studying medicine.

After graduating from the University of Free State in 2005, she likewise shrugged off attempts to dissuade her from expressing her passion for children in pediatrics. But, during a stint in the mining town of Kimberley, she watched one of the South Africa's first emergency specialists defy protocol by thrombolyzing a myocardial infarction in the ER.

"I thought she was hardcore," Dr Marsha says.

It takes one to know one.

High-stakes decision making in a high-energy environment suits her competitive nature, and treating acute stroke is part of the adrenaline rush. Her master's thesis in Emergency Medicine focused on the South African Triage Scale; she believes stroke should be included in the Red Discriminator List.



Sr Tanya Momberg wants the rehabilitation unit to be recognized as a 'joyous environment' with phenomenal outcomes.

Mental toughness notwithstanding; empathy sits right behind her eyes as she recalls the impossible-to-forget case of an eight-year-old with devastating injuries.

With Sr Tanya, too, emotions lie close to the surface, especially when she recounts how her father foretold her entry into medicine. She was the most caring person he knew, he told his daughter as she prepared to leave school. "And a caring person should become a nurse."

In the rehabilitation unit, that caring nature combined with positive energy, humor, and optimism is just what the doctor ordered.

"I want people to know about us," Sr Tanya says, "that we're a family, a joyous environment, and our outcomes are phenomenal."

Marelize shares the same desire for the world to see what happens inside the walls of LPPH.

"I see the involvement, not only from support staff, but from nurses going the extra mile," she says. "They become the patient's family member, celebrating milestones, and giving a bit of themselves every day."

As the hospital's new Clinical Oversight Specialist, Dr Marsha Koekemoer now has the opportunity to shape practice, influence culture, and drive improvement without asking for permission. Above all, her ambition is to ensure Lady Pohambe Private Hospital is recognized as a place of safety for patients.

"We want them to know that if they need help, this is a safe environment where their needs will be met, and they will leave better than they arrived."

Care where it is needed most



Building trust in regional healthcare is key to improving access to cerebrovascular care across Yeongdong, says neurosurgeon and stroke reformer Prof. Kuhyun Yang. "Our goal is not simply to make one hospital excellent. It is to create a region where patients can receive the right treatment, at the right place and at the right time."

PROF. KUHYUN YANG is a neurosurgeon and Director of the Stroke Center at Gangneung Asan Hospital, one of only two diamond hospitals in Korea. Located in Gangneung, a coastal city located in the Yeongdong area of Gangwon Province, the hospital is at the centre of a large geographical area with relatively limited healthcare resources.

Yet Prof. Yang rejects the notion that geography is destiny. The hospital's nine consecutive diamond awards reflect his conviction that people living in Gangneung deserve the same access to life-saving stroke care as those in major cities.

Since joining Gangneung Asan Hospital in 2016, he has led the development of a regional network designed to deliver high-quality emergency care when every minute matters.

In the interview below, Prof. Yang discusses the importance of building trust in regional healthcare – and making sure that trust is supported by real quality and results.

"The important issue is access," he says. "Yeongdong has challenges in recruiting specialists and in maintaining the medical infrastructure that people need close to home. There can also be a strong belief that complex or advanced treatment should be received in Seoul. In stroke, that perception matters because time is critical. So improving awareness is not only about recognizing stroke; it is also about helping people trust that high-quality emergency care can be provided locally."

Please describe the stroke service at Gangneung Asan Hospital at the time you joined the hospital in 2016. Did the Stroke Center already exist?

The Stroke Center already existed, and there was an established foundation for cerebrovascular care. However, I felt there was still room to make the system more integrated and coordinated. Over the years, we worked to strengthen the entire stroke pathway, with a focus on rapid decision-making, treatment, and multidisciplinary teamwork. For me, the important point was not simply having a Stroke Center in name, but creating a system that patients in this region could truly trust. That has been a gradual process over the past decade.

Had you already formed the intention to develop a cerebrovascular care system in the region, or did this vision develop over time?

The vision developed after I came to Gangneung. At first, I thought I might stay only for a short period. Then I saw the reality of regional healthcare. One patient came to our emergency department, but

> "We kept working to **make every part of the stroke pathway faster,** more reliable and more consistent."

the family was concerned about receiving treatment at a regional hospital and chose to transfer the patient to Seoul. During the transfer, the patient suffered rebleeding and unfortunately reached a point where recovery was no longer possible. That experience stayed with me. I thought very strongly that living in Gangneung should never mean losing a chance at life-saving treatment. From then on, building a trustworthy regional cerebrovascular system became a personal mission. I respect a patient's right to choose where they receive treatment when time permits. But in an emergency such as stroke, losing precious time can change the outcome. That is why building trust in regional healthcare – and making sure that trust is supported by real quality and results – has become so central to my work.

When did you become Director of the Stroke Center and what opportunities did this unlock for strengthening the stroke service in the region?

I was appointed Director of the Stroke Center in 2022. Taking on that role gave me the opportunity to think beyond individual procedures and focus on the whole stroke system. Stroke care is never the work of one doctor. It depends on many people working together and on a system that allows each person to do his or her job well. It also gave me a stronger platform to build cooperation with hospitals across Yeongdong. My goal has been to make our center stronger while also helping the whole region raise its level of cerebrovascular care.

Your hospital received a Diamond Award in Q2 of 2024, beginning a run of consecutive Diamond Awards. Can you point to any specific intervention that brought this milestone within reach?

I do not think there was one dramatic intervention that suddenly brought us the Diamond Award. It was really the result of many small improvements accumulating over time. We kept working to make every part of the stroke pathway faster, more reliable and more consistent. Above all, I think the most important factor was the commitment of the entire team. I do not believe that good results come from one person giving orders. Everyone involved in stroke care has an important role, and I wanted each member of the team to understand why quality matters and to take ownership of their part of the system. So I see the Diamond Award as recognition of the whole team. For me, however, the most meaningful achievement is that patients in Gangneung can receive timely, high-quality stroke care here without feeling that they must go to Seoul.

Nine consecutive Diamond Awards point to a deep commitment to maintaining the quality of care. What measures ensure an outstanding performance quarter after quarter?

I think maintaining quality is actually more difficult than achieving a good result once. The key is to make quality part of everyday practice, rather than something we focus on only when we are being evaluated. We continuously look at the entire stroke pathway and ask where delays occur, where communication can be improved, and how we can make the system more reliable. When something does not go as well as we hoped, I try not to begin by asking who made the mistake. I think it is more useful to ask what we can change in the system so the same problem is less likely to happen again. At the same time, I believe it is very important to recognize people when they do something well. Every member of the team should have an opportunity to grow professionally and feel proud of their contribution. When people feel that the quality of care is their own responsibility, high standards become part of the culture. I think that culture of shared responsibility is the main reason we have been able to maintain our performance quarter after quarter.

In 2024, Gangneung Asan Hospital was selected to play a leading role in cerebrovascular care across the Gangwon Yeongdong region. How has this strengthened your efforts to reduce regional disparities? And how would the designation of Gangneung Asan Hospital as a Regional Cardio-Cerebrovascular Center for the Yeongdong region help advance this vision further?

It has helped give a more formal structure to something we had already been trying to do: reduce the gap in cerebrovascular care across Yeongdong. For us, that does not mean every patient has to come to Gangneung Asan Hospital. What is more important is building a system in which local hospitals can confidently care for patients they are able to treat, while patients who need advanced treatment can be identified and



transferred quickly. We have therefore focused on strengthening communication and cooperation with hospitals and specialists across the region. If Gangneung Asan Hospital is designated as a Regional Cardio-Cerebrovascular Center for the Yeongdong region, I believe it would allow us to develop this network further and create a more systematic regional care pathway for emergency and severe cerebrovascular conditions. Ultimately, our goal is not simply to make one hospital excellent. It is to create a region where patients can receive the right treatment, at the right place and at the right time, regardless of where they live.

By what means do stroke patients typically reach your hospital, and what percentage arrive within the time window for treatment?

Stroke patients reach our hospital through several pathways. Some are brought directly by Korea's 119 emergency medical service, while others are transferred from local clinics or regional hospitals to our emergency department. We also operate a pre-notification network for stroke patients in the Yeongdong region using a KakaoTalk-based communication platform, together with a dedicated 119 hotline. These systems allow us to receive information in advance, prepare the appropriate team, and coordinate transfer more efficiently before the patient arrives. Stroke care really begins before the patient reaches the hospital, so close cooperation among local hospitals, specialists and emergency medical services is essential to providing timely treatment. Rather than using a single percentage for arrival within the treatment window, we closely monitor how rapidly patients are

connected to definitive treatment once they enter this coordinated pathway. Among these patients, more than 98 percent are rapidly connected to definitive treatment.

Your leadership style is described as focused on empowering colleagues, fostering professional growth, and celebrating collective achievements. How did this approach to leadership evolve?

I have always believed that leadership should be based more on cooperation than command. Every member of the team has their own expertise, and I want each person to have the opportunity to grow and 'bloom' in their own role. When people do well, I make sure their efforts are recognized. Of course, I have learned a great deal from many senior colleagues over the years, but this leadership style has also developed through my own experience. I have seen that people do their best work when they feel respected and trusted, and when they are proud of the team they belong to.

Not everyone is prepared to embrace change at the same pace. What strategies do you find most effective in countering resistance to change?

I try not to treat resistance as a personal problem. In medicine, people often resist change because they are concerned about workload, patient safety, or whether a new system will really help. My approach is to explain clearly why the change is needed and to involve the people who will actually use the system. If people can see that a change improves patient safety or makes their work more efficient, they usually become more willing to participate. I think lasting change comes from shared understanding and a sense of ownership, not from forcing everyone to move at the same pace.



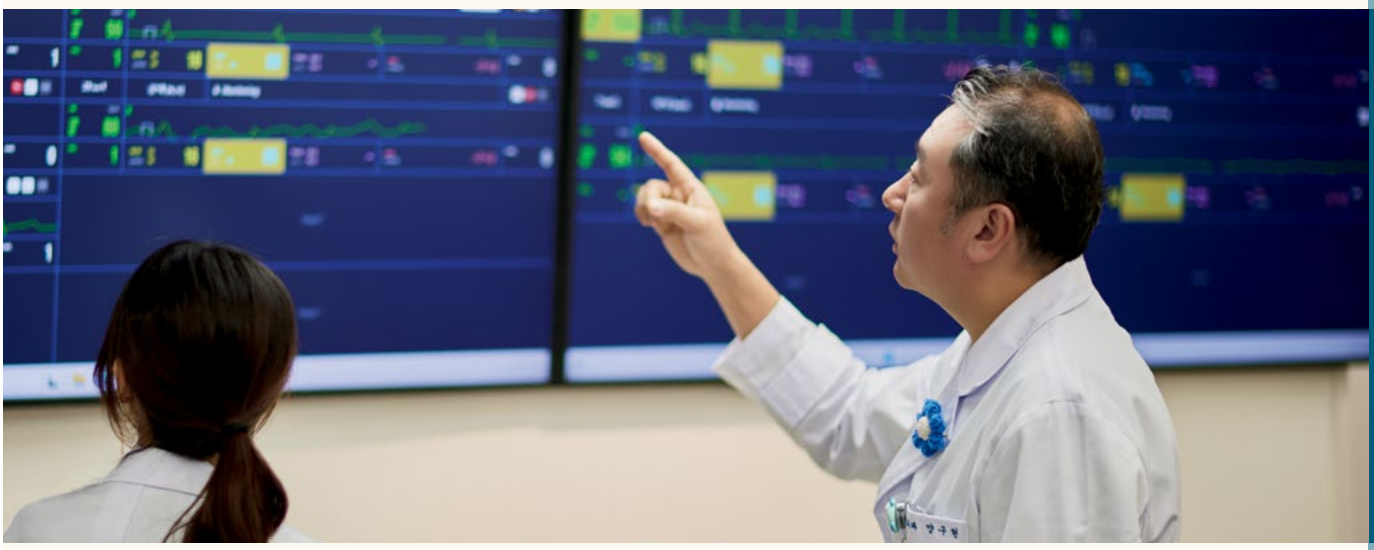


Please tell us where you grew up, how you were educated, and what led to your decision to pursue medicine and neurosurgery.

I was born and raised in Daejeon. I studied medicine at Konyang University and graduated in 2004. I then trained at Asan Medical Center, completed my service as a public health doctor, and later returned for further training in both cerebrovascular surgery and neurointervention. Interestingly, medicine was not my childhood dream. In high school, I wanted to become a judge because I was attracted to the idea of justice. I entered university soon after the Asian financial crisis, and at the time medicine seemed like a practical and secure career path. But as I began meeting and treating patients, I discovered what medicine could really mean. A doctor has the opportunity to directly change the course of a person's life. That was what made medicine meaningful to me, and I have never regretted choosing this path. As for neurosurgery, particularly cerebrovascular surgery, I wanted to be there when someone truly needed me. In cerebrovascular disease, time is critical. In many cases, there is no option to say, 'We will deal with this tomorrow.' When a patient needs treatment immediately, someone has to be there and respond. I felt that if someone had to take on that responsibility, I wanted to be that person.

You moved to Gangneung about a decade ago. What drew you to the east and to the coast?

I did not originally move to Gangneung because I had a special plan to live on the east coast. I was offered an opportunity to work at Gangneung Asan Hospital. Over time, however, Gangneung stopped feeling like a temporary posting and became a place I felt



responsible for. In the end, it was not the coast or the environment that kept me here. It was the sense of responsibility I developed toward this region and its patients.

How did you develop an interest in stroke?

What first attracted me to cerebrovascular disease was its urgency. But as I trained further, I also became fascinated by the fact that the same disease can require very different treatment approaches. That is why I trained in both open cerebrovascular surgery and endovascular treatment. I did not want to be limited by one technique or to choose a treatment simply because it was the one I was most familiar with. My principle is simple: I try to ask myself what treatment I would choose if the patient were a member of my own family, and then recommend the option that I believe is best for that individual patient.

We are always interested in what motivates the bright spots in our community – those individuals who are prepared to lead change not only in their hospital but in their cities and regions. We want to know what drives them and how they sustain their motivation. How would you answer that question?

Patients are the strongest source of motivation. I still remember a saxophone player who had a large, cavernous malformation in the brainstem and became critically ill after bleeding. After surgery, he did not wake up for several hours, which was terrifying for me. Fortunately, he recovered. About ten months later, he came to a hospital symposium and showed me a video of himself playing the saxophone again. Moments like that stay with you. They remind me that our work is not only about treating a vessel or an image; it is about helping someone return to their own life.

What is your favorite part of the day?

The best part of my day is probably hearing that a seriously ill patient is improving. Cerebrovascular care involves many difficult and stressful moments, so seeing recovery gives those moments meaning. That feeling – knowing that a patient and family can breathe a little easier – is the part of the day I value most.

Gangneung Asan Hospital is the first hospital in Korea to implement the vital-sign monitoring system, thynC. What specific advantages does this technology have for patient care in the acute and post-acute phases of stroke?

thynC is a wearable vital-sign monitoring system that allows key vital signs to be observed centrally and in real time, while AI helps identify abnormal changes and generate alerts. This can help the clinical team recognize deterioration earlier and respond more quickly. It also allows nurses to see the condition of multiple patients at a glance and helps doctors identify which patients may require more immediate attention. During rounds, this can make prioritization and communication more efficient. For us, the value of thynC is not that it replaces clinicians, but that it helps limited medical staff focus their attention where it is needed most and supports safer patient care.

In your view, how will AI shape the future of healthcare?

I think AI will be most valuable when it helps clinicians recognize risks that are difficult for humans to monitor continuously. thynC is one example, but the principle is broader. AI can help us detect problems earlier, prioritize patients more effectively and provide clinicians with better information for decision-making. I do not see AI as a replacement for doctors or nurses. Clinical judgment, responsibility and communication with patients will remain essential. Instead, AI should reduce repetitive work and help healthcare professionals use their time and attention more effectively. Ultimately, I think AI has real value only when it solves a real clinical problem and leads to safer, better care for patients.

What can the global stroke community learn from the experience of Gangneung Asan Hospital Stroke Center?

I think our experience shows that geography does not have to determine the quality of stroke care. A regional hospital can build trust through clinical expertise, strong systems and consistent results. It also shows that one strong hospital is not enough. We need a regional network in which surrounding hospitals can confidently care for the patients they are able to treat, while patients with severe or complex conditions can reach advanced treatment quickly. Finally, leadership matters. Quality improves when people feel a sense of ownership rather than simply following orders. My hope is that where a patient lives will never determine whether they can receive excellent care when they need it most.

Everyone can be a cadre



Indonesia's first Angels Region has shown that the collectivist spirit that characterizes Indonesian society is a powerful weapon in the fight against stroke.

SLEMAN is a regency located on the island of Java inside Yogyakarta Special Region, an autonomous province uniquely governed by a monarchy, which is led by the Sultan of Yogyakarta.

Recognized as a strategic agrarian hub, the regency is blessed with thick, fertile soil, and no fewer than 29 higher education institutions make it a welcoming home for fertile minds.

Sleman also enjoys the distinction of being Indonesia's first Angels Region, having been formally elevated to that status on 11 May at a high-level gathering at the Pendopo Parasamya, Sleman Regent's office.

To become an Angels Region, Sleman had to demonstrate its stroke readiness in four areas. That meant having enough stroke-ready hospitals to serve its population, WSO Angels Awards for all the hospitals in the stroke network indicating a high standard of care, stroke-ready emergency services that met the criteria for an EMS Angels Award, and public awareness education through implementation of the FAST Heroes program.

But by meeting the standards for Angels Region status Sleman has also shown its heart.

As a community that values helping each other and working collectively to achieve shared goals, Sleman already had all the qualities needed to become an Angels Region. It was only a matter of measuring, monitoring, and improving performance to ensure the citizens of Sleman are protected from death and disability as a result of stroke.





The beginning of the story

This is not our first meeting with Dr Eni Nurhidayati, Sp.S, neurologist at RSUD Sleman (Sleman Regional General Hospital) where she has been shaping neurological care since 2013. Dr Eni's interest in stroke is a tribute to her late father who passed away as a result of stroke in 2014, when thrombolysis had not yet been implemented in Indonesia. It left Dr Eni determined that every eligible patient should receive the treatment they need, and every patient be given the best chance for recovery.

Her story was captured by Angels consultant for Central Java, Dr Fiarry Fikaris, in February 2025, in an article titled "Golden Threads Woven by RSUD Sleman". But that, Dr Fikaris



explains, was just the beginning of the story. “The rest is persistence to make even broader impact beyond the hospital.”

Back in 2025, RSUD Sleman had just won their third successive WSO Angels gold award, the result of evaluating previous cases, identifying gaps and taking corrective action. Analysis of their data had also highlighted a need for public awareness and lead to a collaboration between the hospital and Puskesmas, the primary healthcare facilities that provide the first level of care.

> When **anyone can be a stroke patient**, everyone can be a cadre.

Less than 18 months later, Sleman Regency has six award-winning hospitals including, in addition to RSUD Sleman, RSUP Dr. Sardjito, RSA UGM, RS JIH Yogyakarta, RSIY PDHI and RS Hermina Yogyakarta. Sleman Emergency Service has likewise been recognised for its achievements in stroke care, its collaboration with Dr Eni leading to a diamond award.

Commitment and the realization that everyone can be a stroke patient were the key drivers of the region’s success, Dr Eni says, and the guest list and agenda at the celebration on 11 May testified to broad support from regional government and health officials. Speakers included Perdosni (Indonesian Neurologist Association) Yogyakarta’s representative, aDr Rakhian Listyawan, Sp.N, FINA, the Sleman’s Regent, H. Harda Kiswaya, S.E., M.Si, and Dr Gregorius Anung Trihadi, M.P.H of DI Yogyakarta’s Regional Health Office, representing the provincial governor.

They had all supported the stroke-ready region efforts all along. They had all become cadres in the fight against stroke.

Carrying the burden together

When anyone can be a stroke patient, everyone can be a cadre. That is the message from Dr Eni who rallied the region’s community health volunteers to meet public awareness targets.

In Indonesia, a health cadre is a trained, community-selected volunteer who serves as the vital link between primary healthcare facilities (Puskesmas) and local communities.

Puskesmas are the first port of call for patients and their role in detecting stroke symptoms and provide fast and accurate referrals is therefore vital. Once a Puskesmas doctor herself, Dr Eni had already capitalised on an opportunity to save more lives by training Puskesmas about stroke.

Now she turned to cadres to build the next link in the chain.

Given that a high cultural value is placed on doing something for one’s neighbors, volunteering as a cadre is held in high regard. The deployment of cadres also means that health news travels fast. Furthermore, Dr Fikaris says, by activating the cadres concept to promote the goals of the FAST Heroes campaign, the program was incorporated and streamlined into the local culture.

Now officially an Angels Region, Sleman has shown that the collectivist spirit that characterizes Indonesian society is a powerful weapon in the fight against stroke, and that a community that supports one another is also one that carries the burden of stroke together.





Hope shaped like an island



It's mindset, not location that counts. That is the lesson from Madeira, the first island in Europe to become an Angels Region.

CREATED five million years ago from volcanic explosions, Madeira is an archipelago and autonomous region of Portugal situated in the North Atlantic Ocean, about 805 km southwest of mainland Portugal and roughly 500 km from the African coast. Annually, more than 2 million tourists descend on the main island Madeira and its smaller neighbor Porto Santo, to enjoy its year-round spring weather, its rich landscape of high cliffs, steep valleys, and natural volcanic swimming pools, whale and dolphin watching, hiking the world's largest prehistoric laurel forest, and drinking its famous fortified wine.

But no tropical island paradise is exempt from the challenges in health service delivery as a result of geographic isolation, resource limitations, and high demand during peak seasons. These are exacerbated in the case of time-dependent emergencies like stroke.



Defying geography

Madeira's 250,000 residents and scores of holiday makers are fortunate to have access to Hospital Nélio Mendonça, which also happened to be the birthplace of soccer legend Cristiano Ronaldo on 5 February 1985. Located in the capital Funchal, the hospital got a stroke unit in July 2009. They were among the first hospitals in Europe to register with Angels in November 2016, and introduced a thrombectomy service in March 2019. They won their first ESO Angels Award in Q3 of 2021, and had won six more by the start of 2025 when they and consultant Inês Carvalho began the process of converting Madeira into Europe's first island Angels Region.

Inês had gotten to know Hospital Nélio Mendonça's stroke coordinators at national conferences, and shared the view that geography shouldn't decide outcomes. Even in the middle of the Atlantic Ocean, everyone should have the same opportunity of being treated, Inês says.

The best access to quality stroke care for the people of Madeira and their guests would come from greater public awareness and optimized emergency transport in addition to the stroke services already available at the island's main hospital. Becoming an Angels Region would tick all these boxes. At the same time, it was an opportunity for Hospital Nélio Mendonça to take their performance up another notch.



Connecting with decision makers

Inês's approach was twofold. One was to consult widely with all the teams involved in stroke care, including the prehospital, stroke unit, emergency department, and thrombectomy teams. Small working groups then agreed on opportunities for improvement, and activities to address gaps.

Equally important was connecting with decision makers in the departments of health and civil protection, and education, whose support she solicited via personalized letters. Working with local government is crucial for achieving Angels Region status, and here geography counted in her favor. Because Madeira is an autonomous region of Portugal, local authorities can make decisions fast and independently of the mainland.

Local government support was particularly effective in bringing on board the Regional Emergency Medical Service (SEMER) which had yet to meet the criteria for Angels Region status. Prehospital care on the islands is provided by firefighters and volunteers and made more complex and challenging by the distance between Madeira and Porto Santo. Helicopter transfers from Porto Santo to Funchal take under 15 minutes but only when Madeira is living up to its nickname, 'Island of Eternal Spring'. Extreme weather events are becoming more intense as a result of climate change.

Inês's intervention took the form of protocol adjustments backed up by a series of trainings. She also arranged training for health centers, as uneven



> "They're a bright spot because they're **always focused on solutions.**"

EMS cover can lead to patients consulting primary care providers in an emergency.

On top of the mountain

As for Hospital Nélio Mendonça, the doctor prescribed a blind simulation with the EMS to trouble-shoot prenotification and communication, as well as training for the emergency department and stroke unit. Inês also addressed priority actions to reduce delays in door-to-groin time in a round table discussion with the stroke code and thrombectomy teams and recruited HCP support for the schools-based FAST Heroes stroke awareness campaign, which had gotten off to a slow start.

Remote islands tend to be close-knit communities where everyone seems to know everyone and their cousin. By leveraging a network of aunts and neighbors and parents and teachers, FAST Heroes implementation met its target in under six months, removing the last barrier to Madeira becoming an Angels Region.

The numbers spoke for themselves. Over a period of six months, EMS prenotification had increased from 32 percent to 71 percent, and patients treated at CT from 13 percent to 68 percent. In Q2 of 2025 both the hospital and SEREM won their first diamond award. On 17 March 2026, Madeira celebrated becoming Portugal's second Angels Region, and in April, Hospital Nélio Mendonça met another milestone by become an ESO certified stroke center.

They were indeed, as Inês says, "on the top of the mountain".



A bright spot

Madeira may be 800 km away from the mainland, but they are nevertheless a good example for the rest of Portugal, Inês says. "They're a bright spot because they're always focused on solutions."

Perhaps it's that being an island makes you agile and adept at maximizing resources.

Solutions that expand treatment access have included implementing a hub and spoke model in the middle of the ocean to offer a thrombectomy service to the Azores more than 250 nautical miles away and making CT imaging available on Porto Santos. That way patients on the smaller island can be assured of access to thrombolysis for acute stroke, no matter what the weather gods have up their sleeve.

Challenge accepted



Prof Vladimira Vuletić (left) and Dr Senka Kajčić.

Croatia's first Angels Region demonstrates what it means to work together, embrace every challenge, and lead from the front.

IF you're in a hurry, Primorje-Gorski Kotar County in Croatia is tricky terrain, no matter what your emergency.



KBC Rijeka hospital director Prof. Alen Ruzic with Angels consultant Maria Sheverdina and Rijeka Mayor, Iva Rinčić.

You could find yourself waiting for a ferry on Rab or Lošinj or another of the famous islands in Croatia's Kvarner Gulf, or stranded in a charming, historic seaside town along the rocky, rugged Adriatic coastline. Or you could be slowed down by the lush, mountainous forested regions of Gorski Kotar. But here's why things will probably turn out okay.

In red category emergencies, the Institute of Emergency Medicine of the Primorje-Gorski Kotar County targets a response time of 10 minutes in urban areas, or 20 minutes in the countryside. If it's air transport you need, one of the service's four helicopters will be in the air within 5 minutes in daytime, and in under 15 minutes at night.
And if the emergency is a suspected stroke, neurologists at the award-winning University Hospital Center (UHC) in the capital Rijeka will know about it well before they hear the whomp-whomp sound of rotor blades. For if there's one word that embodies the spirit of collaboration that has led to Primorje-Gorski Kotar becoming Croatia's first Angels Region, it is prenotification.

Rijeka (that's the county's capital city) is a prenotification pioneer, EMS chief Dr Senka Kajčić confirms.

It became part of their modus operandi long before the idea took hold to make prenotification mandatory throughout Croatia's 21 counties. They're leaders in data collection and analysis, too, with a reputation for accepting every new challenge and reaching for every new target.

> "It was special because it **brought together all the participants** in this mission."

In the three-and-a-half years since Dr Senka became head of the service, there's been no shortage of challenges. In February 2024, the service was expanded to include non-emergency patient transport, taking the work force from 250 to 380. Less than two months later, Rijeka became one of the four main bases for Croatia's newly launched

helicopter emergency medical service (HEMS), which went a long way towards solving the problems of islands and mountains.

Then in 2025, UHC Rijeka's neurology chief Prof Vladimira Vuletić invited them to join the campaign to convert the county into an Angels Region, and the answer was a foregone conclusion.

There was already a relationship of collaboration and mutual respect that prioritized the safety and well-being of citizens. She knew the emergency service only had to apply to the Angels EMS Awards for the rest of the world to realize how good they already were, Prof Vladimira says.

Diamonds are a girl's best friend

Stroke care excellence in Rijeka is an overnight success that was a decade in the making. Collaboration between hospital and EMS dates back almost 10 years to when Prof Vladimira first arrived from Zagreb.

Education for healthcare staff across departments and services was met with enthusiasm and rewarded with constantly improving results. By the time Angels Region status became their goal, UHC Rijeka was already a diamond hospital twice over, and the EMS was on track for diamond status.



Dr Senka Kajčić.

Public health campaigns were held three times a year, including at schools and kindergartens but weren't as well-conceived as the award-winning FAST Heroes program, Prof Vladimira says.

To reach FAST Heroes implementation targets (a criterion for Angels Region status) Prof Vladimira sought the support of Rijeka Mayor, Iva Rinčić, who connected her with school principals.

Supported by Angels consultant Maria Sheverdina, the campaign was launched on World Stroke Day at the end of October and shot past its target by the end of November.

Celebration, education, inspiration

On 27 January 2026, Angels Region status was officially bestowed on Primorje-Gorski Kotar County during a hybrid event attended by Croatian Neurological Society president Prof. Zdravka Poljakovic, and Saša Balija, Assistant Director of Nursing at the Croatian Institute of Emergency Medicine. "It was special because it brought together all the participants in this mission," Prof Vladimira says of the event. "Everyone was proud and satisfied that their work and efforts had been recognized beyond our borders."

Consultant Maria Sheverdina had planned an event that was as much about education and inspiration as it was about celebration, as key participants shared their experience with the live and online audiences. Primorje-Gorski Kotar County might be the first Angels Region in Croatia, but it would definitely not be the last.

Because the consequences of stroke cause suffering not only to the patient but to the entire family and community, becoming an Angels Region offers Primorje-Gorski Kotar County the prospect of a better life, less marked by illness and disability. And the benefits are greater than stroke.

Prof Vladimira says: "This kind of project where not only the health system but also the education system, local authorities, and the population are involved, connects us more, and shows that everything is possible when we unite with a mission."

'There's no better feeling'

Prof Vladimira was drawn to neurology by her love for mathematics and logic, and because the brain had always struck her as the most impressive organ.

She began her career in her hometown of Slavonski Brod, "in the eastern part of Croatia where they like to eat special sausages and ham and where there are a lot of strokes." Stroke was prevalent at the general hospital in Slavonski Brod,



Prof Vladimira Vuletić.

and became the topic of her doctoral thesis.

Patients and family members who appreciate the positive impact on their quality of life and self-confidence are a primary source of professional satisfaction, she says. So is seeing the impact of new methods on patient outcomes.

After 10 years in Rijeka, Prof Vladimira observes with satisfaction a community that is better educated, patients who recognize the symptoms and seek help in time, and much better outcomes than before. She says, "It is a long-term effort, but now, after 10 years, the results are visible. And it was all worth it."

The pessimism once associated with conditions like stroke was precisely the reason Dr Senka Kajčić ruled out neurology as a specialization. She wanted to be a doctor who saved lives and prevented consequences, she says, and back then the outlook for stroke patients was simply too bleak, the disabilities life-changing.

In the emergency department she discovered a field where she could help people directly in the worst moment of their lives. "I'm a very happy emergency physician," she says. "I can see the result of my work very quickly. People feel useful when they are part of a good story. There's no bigger happiness, no better feeling, than saving somebody's life, or seeing someone with a severe injury recover their health and resume their life among their friends and family."

Meeting the criteria for Angels Region status confirms she and her team are doing a good job. They're making sure everyone who makes Primorje-Gorski Kotar County their home or destination is safe, and that no matter whether they're on an island or a mountain slope, help is just moments away.

More time and moments of joy





One by one, three dreams came true in the Kazakh province of Aktobe, location of the first four Angels Regions not only in Kazakhstan, but in all of Central Asia.

Dream #1: Change

The dream of change began in 2018 when Dr Nurbakyt Serikova, Head of the Stroke Center at Aktobe Medical Center, attended the School of Stroke annually held in the Kazakh capital, Astana, and was introduced to the Angels Initiative. An invitation to the Angels' signature Train-the-trainer event followed, and it was during this event, held in Mainz, Germany, in 2019, that the future of stroke care in Aktobe province came into focus.

What Dr Nurbakyt was most struck by, besides the testimony of stroke doctors from other countries, was the transformative potential of ambulance prenotification – the first key priority action in the hyperacute pathway. A simple phone call to alert the hospital that a suspected stroke was underway meant the stroke team was assembled even before the patient reached the ER. This was something they definitely had to implement, Dr Nurbakyt decided.

The daughter of a gynecologist, Dr Nurbakyt knew from childhood that medicine was her destiny. She'd witnessed the hard work that came with being a physician, but what mattered more was that her mom was "bringing new life into the world and saving mothers". Much later during her internship, when she saw stroke patients become disabled or die, she embraced both stroke neurology and the need for change. She says, "I understood that it depended on us, that humans could change it."

Back from Mainz, she saw no reason why stroke care in Aktobe province shouldn't be as good as or better than in other parts of the world, and with the support of Angels consultant Lev Prystupiuk, embarked on a stroke care transformation journey.

Dream #2: A place on the stage

Dr Nurbakyt was clear that changing outcomes for stroke patients was about more than survival or living an unimpeded life. "It's not just about saving people or giving them a normal life," she would tell the younger doctors in her hospital. "It's about families and memories and time to spend with parents and grandparents. It's about giving more time and moments of joy to families."

It wasn't only the families in her own district Dr Nurbakyt was thinking of. The former chief neurologist for the entire province, and now a consultant neurologist at all five of its stroke hospitals, Dr Nurbakyt's dream of change reached beyond her hospital doors and beyond the boundaries of Aktobe district.

Transforming stroke care in the province would need everyone to work together, but there was also







the matter of leading by example. Dr Nurbakyt's best chance of rallying the other hospitals in the province was for Aktobe Medical Center itself to achieve the world-class standard they aspired to.

Dr Nurbakyt implemented all the tools recommended by Angels, including a stroke bag, Angels checklists, and a dedicated stroke phone, along with the resources in the Angels Academy.

In quarter three of 2024, the hospital won the first of six consecutive diamond awards, and in Helsinki in May 2025, during the presidential session at ESOC, Dr Nurbakyt took her place on the stage beside some of the best hospitals in Europe.

Another dream had been realized.

Dream #3: The first Angels Regions in Kazakhstan

As soon as she heard about the Angels Regions strategy, Dr Nurbakyt recognized that this was her next goal. Angels Region status for all four districts in the province – Aktobe, Khromtausky, Mugalzharsky, and Shalkarsky – would make change sustainable; it would be the culmination of all the progress made since the beginning of her partnership with Angels in 2019.

The road to regions status now began in earnest, with a comprehensive assessment of stroke service geography, including coverage of stroke centers and accessibility for the population. After completing the regional mapping, Lev conducted on-site observations in each stroke center to identify bottlenecks, delays, and non–value-adding steps in the stroke pathway. Quality monitoring through the RES-Q registry and a series of multidisciplinary simulations delivered important breakthroughs.

Videos recorded during in-situ simulations offered a powerful argument for change in those hospitals that insisted their stroke service needed no improvement. These recordings delivered evidence of preventable delays of up to 40 minutes, and subsequent simulations with implementation of the stroke code and checklists demonstrated that an award-worthy door-to-needle time of 40 minutes was within reach.

> **Strong collaboration** with regional opinion leaders and the Departments of Health and Education **placed the regions project on a solid footing.**

A major challenge across all four regions was the limited number of healthcare professionals familiar with modern stroke protocols, which was addressed via a program of standardized education. No less important was instilling a culture of multi-disciplinary teamwork, and creating consensus that a stroke patient was "not a neurology problem" but a problem of the whole team from admission to post-acute nursing and early rehabilitation.

Strong collaboration with regional opinion leaders and the Departments of Health and Education placed the regions project on a solid footing. In addition, the strong Kazakh tradition of grandparents' involvement in childcare created fertile ground for the child-led knowledge-transfer mechanism underlying the FAST Heroes stroke awareness campaign – which was kickstarted by a series of face-to-face educational sessions involving more than 120 teachers.

The Angels Regions strategy recognizes that stroke awareness and optimized emergency transport are vital for getting stroke patients to the right hospital in time, and the Aktobe Regional Station of Ambulance and Emergency Medical Care rose to the occasion with a platinum award in quarter one of 2025, followed by four diamonds.

Advice for fellow dreamers

With the third dream now realized and history rewritten, Dr Nurbakyt has valuable advice for fellow dreamers who want to make their own regions safe for stroke. It starts with getting the basics right – treating patients faster for better outcomes, implementing a stroke protocol with prenotification, educating teams, and committing to quality monitoring by submitting data to RES-Q.

The next important step is forming partnerships with authorities, including the Department of Education, and forming a working alliance with teachers. In Aktobe, a plan is already in place to involve even more schools and teachers in FAST Heroes in the coming year.

And it doesn't end there.

In the four districts now officially recognized as Angels Regions, the next awareness project is to educate primary care physicians about stroke symptoms and prevention. This will allow patients who seek help at polyclinics to be rapidly assimilated into the referral system, and to receive the best possible treatment in a network designed and optimized to give life a second chance.

Latvia's capital gains

Latvia scores a first as the city of Riga is recognized as an Angels Region, marking more than a third of the country's population safe for stroke

HERE are some of the things that make the Latvian capital Riga different from capital cities elsewhere in the world.

- *It has the highest density of Art Nouveau buildings in the world.*
- *It has an enormous market located in five former World War I Zeppelin hangars.*
- *It has the tallest tower in the European Union – at least on hot days, when the metal expands and it beats its German rival by 3 cm.*

> "We can have a door-to-needle time of six or seven minutes but there's **no point if the patient came too late** or not at all."

And, cue drumroll – because Riga recently became the world's first capital city to be recognized as an Angels Region.

This Latvian first isn't all that surprising when you consider that Riga is the home of Pauls Stradins Clinical University Hospital, a diamond hospital 28 times over. Having more awards than any other hospital in Europe doesn't mean they got there ahead of the others – the hospital only won its first award in 2018, one year after the ESO Angels Awards were launched. But since becoming a diamond hospital they have demonstrated the same level of excellence an unbeaten 28 times.

The secret is consistency, says neurologist Dr Kristaps Jurjāns, a 2025 recipient of the Spirit of Excellence award. Under his larger-



Dr Kristaps Jurjāns receiving the Spirit of Excellence Award from Jan van der Merwe and Belén Velasquez during ESOC 2025.

than-life leadership, Pauls Stradins CUH has become so synonymous with stroke care excellence that one risks forgetting that Riga has another superstar – Riga East Clinical University Hospital, with the same number of awards certificates (including seven diamonds) on their trophy wall.

These hospitals are located on opposite sides of the Daugava river, and serve different referral networks, so it's fair to say that the city more than meets the first criterion for Angels Region status – access to a high standard of stroke care for all its citizens.

But as Dr Jurjāns always tells members of the national ambulance service (NMPD) in training workshops, there's no point in the hospital having record-breaking door-to-needle times if patients don't arrive in time for treatment.

"I always say to them the hospital can work like a factory. But if you don't bring us the patient or provide us with the information we need, there's no point in being a super factory. We can have a door-to-needle time of six or seven minutes but there's no point if the patient came too late or not at all."

The significance of a seamless and immediate connection between EMS and hospital is of course the precise foundation for the Angels Regions strategy, coupled with the need to educate the community so people can recognize the signs of stroke and the importance of calling 112 without delay.

So with two hospitals at the top of their game, when Angels team leader Rita Rodrigues introduced the goal of converting Riga into an Angels Region early last year, it was understood that their focus would be twofold – a first EMS Angels Award for the ambulance service, and rolling out the FAST Heroes stroke education campaign in the city's elementary schools.

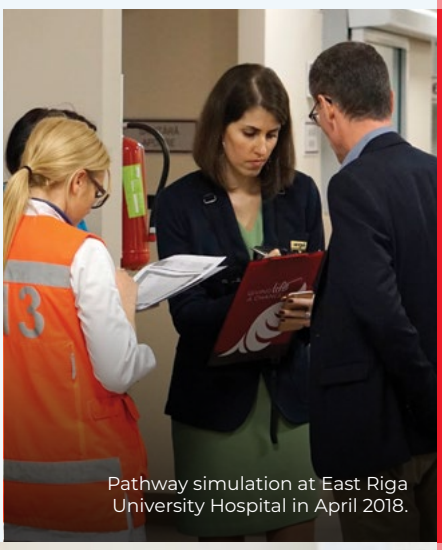
An auspicious beginning

Rita began working with Riga hospitals in 2018 and led simulations with Riga East Clinical University Hospital in April, and at Pauls Stradins CUH in September. By then, neurologists from the hospital had already attended an Angels Train the Trainer program in Wiesbaden, Germany, and before the simulation commenced, a younger Dr Jurjāns proudly pointed out their first gold certificate outside the stroke unit door.

In the first round of simulation, the team resolved the first case in a fleeting 20 minutes, then found a way to improve on it. What if the hypothetical ambulance team, having pre-notified the hospital, delivered the patient directly to the CT scanner? It was a case of small change, massive impact. By employing these two key priority actions, the second dummy patient was treated within 9 lightning-quick minutes.

Prenotification of suspected strokes is one of five criteria for the EMS Angels Awards that were launched in 2021. For Riga to obtain Angels Region status, the NMPD would have to submit patient data for at least 30 patients to RES-Q in order to demonstrate that hospital excellence was matched by prehospital excellence, and that stroke patients in Riga reached the "factory" in time to be given a second chance at life.

Data extraction and filtering and getting the appropriate permissions from national coordinators took time, but in March 2025, the project got a boost when, at Dr Jurjāns diamond award.



Pathway simulation at East Riga University Hospital in April 2018.



Angels' Rita Rodrigues with Assoc. Prof. of Neurology, Guntis Karelis, during a simulation at Riga East University Hospital in April 2018.

Everyone can be a hero

FAST Heroes implementation targets are population-based. In Riga it was estimated that 48 class rooms would have to join the campaign to keep grandparents in the capital safe. That in the end with a great effort from the Center for Disease Prevention and Control, Riga sailed over the finish line with 63 classes under its belt owes a great deal to Dr Jurjāns, who, as campaign ambassador, became something of a cheerleader and Pied Piper.





Several things fell in place almost at once. The education department in the mayor's office agreed to encourage participation in schools. The Center for Disease Prevention and Control set aside some money to support the project, and, as is fitting in a city with a thriving cultural scene, a play based on the FAST Heroes campaign was performed for an audience of aspirant superheroes from four schools – Incukalns Elementary School, Džukte Elementary School, Jurmala Pumpuru High School and Valmiera Pārgauja Primary School.

The play was created in collaboration with independent theatre group Kvadrifons, and the script underwent expert scrutiny from Dr Jurjāns himself, who also made an on-stage appearance to answer questions from the audience.

"By educating children at an early age, we are creating a society where everyone can become a real hero," Dr Kristaps says. In Latvia, where basic health education is no longer part of the curriculum, teaching children how to prevent stroke will certainly benefit the overall healt of the community.

With close to one million people living in the Riga metropolitan area, Angels Region status for the capital means well over a third of Latvians are now living in safe city for stroke and can expect standardized care no matter where
they are.

Now, here are some of the things that make Latvia different from countries elsewhere in the world.

- *It has the widest waterfall in Europe.*
- *It has one of the world's oldest flags – the red background with a white stripe dates back to the 13th century.*
- *Its national animal is a ladybird.*
- *In 1510, it was the location of the world's first decorated Christmas tree.*

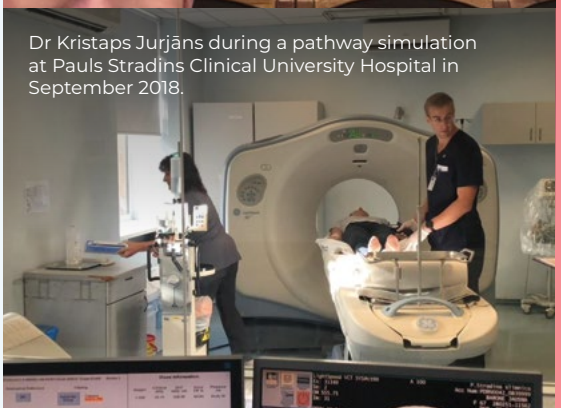
**By 2027, will it be the world's first Angels country?
You'll hear it here first.**

200 Angels REGIONS by DECEMBER 2027





Dr Kristaps at the performance of a play based on the FAST Heroes campaign.

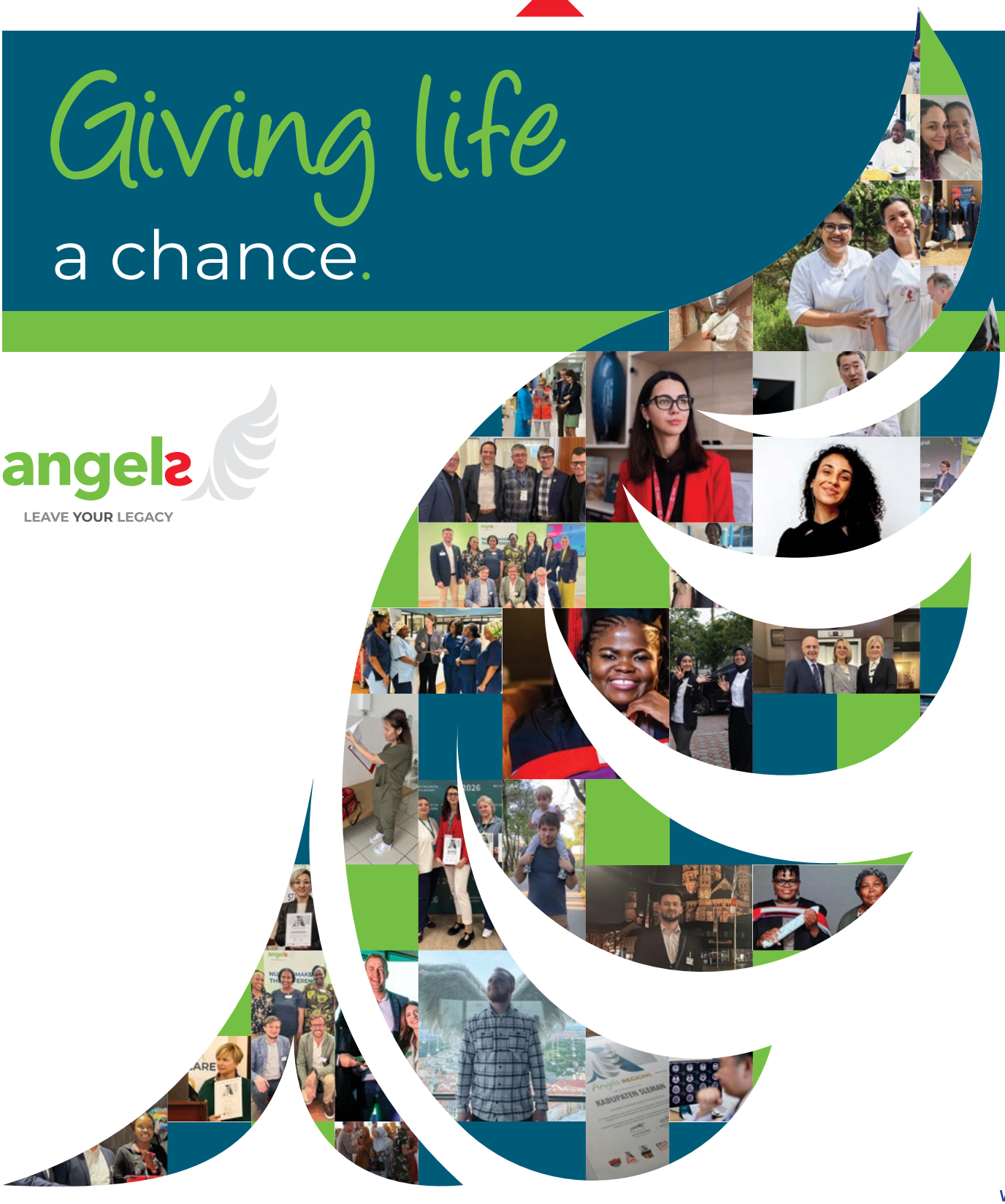


Dr Kristaps Jurjāns during a pathway simulation at Pauls Stradins Clinical University Hospital in September 2018.

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Angels Initiative is a non-promotional, health care project of Boehringer Ingelheim International GmbH to support the ESO and WSO in implementing their main goal, to improve stroke care around the world.