

# The ANGELS Journey

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100 REGIONS | DECEMBER 2027

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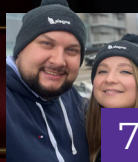


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# All together now

# Welcome

to the final edition of The Angels Journey for 2024.



**“Together, we transform challenges into shared victories, creating a ripple effect of positive change and hope.”**

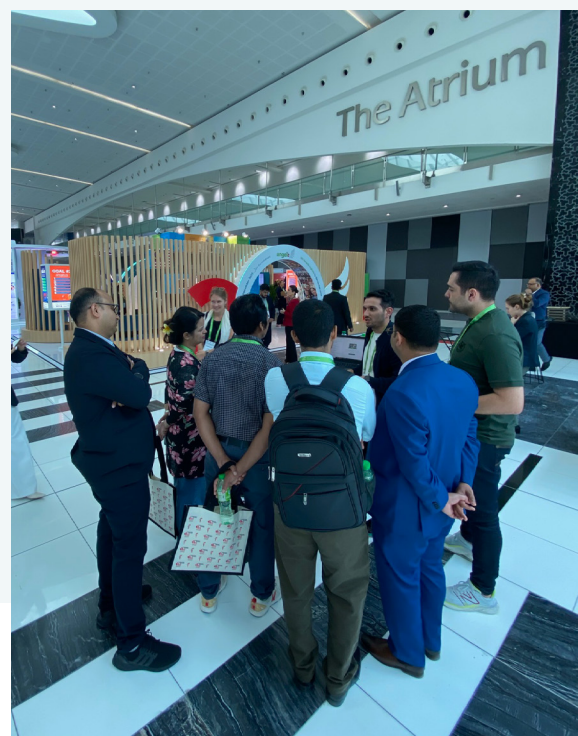
This year at the World Stroke Conference in Abu Dhabi, I witnessed perhaps the most vivid example yet of the power of the Angels community. I ran into Dr Chrissi Tunkl, a German neurologist who, in her free time, supports the Nepalese stroke community to help set up and improve stroke care in their country. She was looking for advice and support for expanding her educational efforts there.

I had just spoken with Dr Claudio Jiménez from Colombia who, with his government's support, has enrolled nearly 19,000 nurses and thousands of doctors and paramedics in training on the Angels website. I suggested Chrissi should speak to him to see if any of their strategies could work for her project in Nepal. I introduced Chrissi to Claudio and his compatriot Dr Angel Corredor at the Angels exhibition booth and asked her to explain her challenge.

What happened next was the magic of the Angels community. After Chrissi explained the situation, Claudio described how he mentored new treating hospitals in similar circumstances, allowing them to create their own communities within the hospital.

He showed her examples of how he set up various “hospital communities” in Colombia and mentored them from a distance. Inspired by this idea, Chrissi called the Nepalese delegates over to meet Claudio and to learn how to apply these strategies in Nepal.

Soon, an impromptu workshop formed around a small table next to the Angels booth, with seven Nepalese doctors, Claudio and Angel from Colombia, and Chrissi from Germany all passionately discussing how to support the Nepalese community in improving stroke care. No judgment, no politics—just a community of like-minded people with one goal: to help each other provide the best outcomes for their patients.



# 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 8,000 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](https://angels-initiative.com)

It was a reminder why the idea behind the Angels Regions strategy is so profoundly impactful: when we unite around a common goal, stroke care transcends individual efforts and becomes a collective mission. Together, we transform challenges into shared victories, creating a ripple effect of positive change and hope.

In this edition of The Angels Journey, you will encounter many examples of how being part of the Angels community makes a difference, including stories about how Almería's community became the first Angels Region in Europe, how the Arrow Project that originated in Spain is now saving lives in Latvia, and how a group of Lithuanian doctors are helping the Kazakhstan stroke community set up a stroke simulation center.

You will see the power of community at work in places as diverse as India, Ukraine, Argentina and Ecuador, in stories that acknowledge the contributions of, among others, doctors, paramedics, local authorities and community leaders.

We end this final Angels Journey of 2024 with amazing news from a place whose good news stories we don't hear often enough: we have the first-ever Angels awards in Iraq. And while in each of these hospitals there is a brave and determined leader, they'd be the first to agree that their success is a story of community in action. What an incredible way to end the year.

We wish you all a wonderful festive season. Thank you for making this community what it is, and on behalf of all the patients who benefited from your commitment to excellence – thank you!



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

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# Work together, win together



History-making Almería has shown that it takes a community to become an Angels Region, and a community to celebrate it.

## THE race to convert the first Angels Region in Europe ended in a photo finish.

Reaching for the tape more or less simultaneously were two regions in Ukraine (Khmelnyskyi Raion and Kamianets-Podilskyi Raion), Savona in Italy, the Algarve in Portugal and Albacete in Castilla-La Mancha, Spain. But the highest platform on the podium belonged to Almería where the stroke community gathered on 30 October to celebrate this important milestone.



Converting an Angels Region means generating change on a grand scale.



When at the start of 2024 Angels consultant for Andalusia, Susana Granados, joined the race to convert Europe's first Angels Region, Almería looked like a strong contender. Torrecárdenas University Hospital in the capital city was already a champion. The two smaller hospitals,

Hospital Universitario Poniente and Hospital La Inmaculada, had both attended Angels Days and were looking forward to working with her. And the region's emergency service, the Centro De Emergencias Sanitarias (CES) 061 Almería, already had two EMS Angels Awards on their trophy wall.

But to reach her goal she would have to put in the hard yards. Both Poniente and La Inmaculada would have to reach at least gold status for the region to be in contention; and there were targets to reach for FAST Heroes implementation to ensure that Almería's population would know what to do if someone had a stroke.

Converting an Angels Region means generating change on a grand scale, and getting hospitals, emergency services, local authorities and public educators to all work together to provide safe hands for stroke patients in their communities. It helps when there is a bright spot to light your way.

## The bright spot spreads its light

Of all the bright spots in Almería there was one that shone brighter than all the others. In 2022 Torrecárdenas University Hospital had become the first diamond hospital in Andalusia and would go on to become the first hospital in Spain to achieve four consecutive ESO Angels Awards. The award put Almería on the national map, and marked a turning point for stroke care in the region.

"There was a before and after," Susana says of this watershed moment. There was every chance that Torrecárdenas's success could help unlock the potential in the rest of the province and score another first for Almería.

For her consultancies at Hospital Universitario Poniente and Hospital La Inmaculada Susana followed the same script – holding multi-disciplinary meetings, and enrolling them with RES-Q so they and she could analyze the pathway and evaluate their performance.

She recalls: "The simulation training at Hospital Poniente was my first simulation ever, and it went pretty well. Right away, we also agreed on plans to implement key priority actions and improve post-acute care at both hospitals."

Hospital Inmaculada is situated in the north, which is the only part of the region not covered by the region's EMS, the Centro De Emergencias Sanitarias (CES)





061 Almería. Primary care physicians attend patients in medicalized vehicles up to an imaginary line called km 21, where they are transferred into the care of the CES and transported to the hub.

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By working together towards the same goal, Almería had made sure that **stroke patients in the region would have second chances.**

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Susana organized a training event involving doctors from Inmaculada, the CES and primary care, and laid the groundwork for implementing the RACE scale, which is a simple and rapid neurological scale to detect acute stroke patients with a high probability of having a large vessel occlusion.

#### A contamination of motivation

Because a stroke patient's journey starts in the community, public awareness of stroke is the first link in the chain of survival. For Almería to become Europe's first Angels Region,

they therefore had to meet targets for implementing FAST Heroes – the award-winning stroke awareness campaign that has already educated over half a million children about stroke. In Almería, a pilot project undertaken some time before had not had much impact but Susana had a breakthrough when Joaquín García, the chief neurology nurse at Torrecárdenas University Hospital, had the brilliant idea of working with the school nurses.

After first securing the support of the ministers of health and education, they introduced the FAST Heroes campaign to more than 50 school nurses, and by July the program had been implemented at 22 schools.

To get her hospitals over the line, Susana had a plan to consolidate her work in the region. She says, “It was important after working with each hospital separately to get them all together in order to create momentum. This opportunity came when the steering committee in the region invited me to help them organize their annual stroke day, which gave me access to all the regional key opinion leaders at the same time, on the same day, in the same room.

“I introduced the Angels Region strategy, of course, and I would say there was a contamination of motivation especially when we talked about the Angels Awards. Of course all the hospitals wanted one and we talked about what the next steps could be; what we could do, and how we could help each other.”



#### A joyous celebration

The next time the stroke community of Almería met in the same room, was on October 30, 2024, and this time it was for a celebration. The quarter two results had confirmed that Hospital Poniente had won a platinum award and La Inmaculada their first gold.





Torrecárdenas collected another diamond, of course, and CES 061 Almería their third platinum award.

By working together towards the same goal, Almería had made sure that stroke patients in the region would have second chances.

This spirit of collective goodwill and shared purpose was evident at a gathering of everyone who had played a role in elevating Almería into an Angels Region. Taking turns behind the podium were Minister of Government of Almería, Ms Aránzazu Martín Moya, Minister of Education, Mr Francisco Alonso Martínez, Regional coordinator of School Nurses, Ms Sonia Martínez Giménez, Minister of Health Mr Juan de la Cruz Belmonte Mena, regional stroke coordinator Dr Patricia Martínez Sánchez, and Regional Stroke Coordinator of CES 061, Gabriel Navarro Lorenzo.

The stroke coordinators from all three hospitals, Dr Salvador Maroto of Hospital de Poniente, Dr Mateo Silvente of La Inmaculada and Dr Antonio Arjona of Torrecárdenas, shared the stage, as did a stroke

survivor, Mr Rogelio Manuel Parrilla Vargas, and an entire class of little heroes from the public rural school, Tres Villas in Nacimiento.

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A community that  
works together,  
wins together.

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The award was of great importance, Ms Martín said. “It represents a recognition for which many regions across the continent and the rest of the world are working to become the first in Europe to achieve this level of collaboration.”

Since making history by becoming Europe's first Angels Region, there have been more occasions to celebrate. Hospital Poniente and La Inmaculada have each won their second award, and Torrecárdenas has reeled in its eighth diamond, showing the world that a community that works together, wins together.





# The power of consistency

If there was a leaderboard for Angels Awards, Pauls Stradins Clinical University Hospital would be right at the top. Consistency is the key, the head of the stroke unit says. Plus there's always room for improvement.



Dr Kristaps Jurjāns

**"We are what we repeatedly do. Excellence, then, is not an act, but a habit."**

Misattributed to Aristotle as this quotation may be, the idea that consistency is critical for success is loudly affirmed by among others the world's top athletes, business tycoons, and Dr Kristaps Jurjāns of Pauls Stradins Clinical University Hospital in Riga, Latvia.

If there was a leaderboard for Angels Awards, Dr Jurjāns's hospital would be right at the top, with 24 diamond awards and no end in sight. They first put up their hand at the start

of 2018 when they registered with Angels, and by the end of that year began a hot streak of diamond awards that would have been uninterrupted but for a missed data entry deadline in the summer of 2023.

"You start something, work at it until you think it works and then you keep doing it," Dr Jurjāns explains. Once you've achieved consistency, treating acute stroke becomes "a routine", and if it's a first-class routine then "a second-year resident can make a correct treatment decision in about 10 minutes".

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Dr Jurjāns was struck by the **simplicity and clarity** resulting from the use of colours and pictograms.

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Dr Jurjāns attributes his confidence to being trained by the most prominent stroke physician in Latvia

and 2020 ESO Spirit of Excellence Award winner, Prof. Evija Miglane. But it was under his leadership that the stroke team at Pauls Stradins arrived on the international stage and has stayed there. During an Angels Train-the-trainer event where he'd been invited as a speaker, Dr Jurjāns joined the audience for a presentation of the post-acute intervention, the Arrow Project, and saw another opportunity to improve.

Developed by three nurses at the Regional University Hospital of Málaga in Spain, the Arrow Project standardizes post-acute stroke care via a system of colour-coded arrows that help doctors, nurses and even porters easily identify the type of stroke and side affected, and via a QR code access details of the treatment protocols for each day, such as regular checks for dysphagia, glycaemia and fever.

Dr Jurjāns was struck by the simplicity and clarity resulting from the use of colours and pictograms including those that indicate whether a patient had been tested for swallowing difficulties and, once tested, what constraints there were on their food intake. Within a few months, an adapted version of the project was taking root in his own stroke unit.



## Here was something that might help

Swallowing for human beings is a complex business. It takes around 50 pairs of muscles and several cranial nerves for food to be conveyed safely from your spoon to your stomach – a journey that consists of three phases.

In the oral phase, your tongue collects the food, then works with the jaw to move it around your mouth ready for chewing. Chewing breaks down the food to the right size and texture, aided by saliva which softens the food.

In the pharyngeal phase, the tongue pushes the food to the back of the mouth, triggering a swallowing response that passes the food through the throat. To prevent food or liquid from entering the airway and lungs, the voice box closes tightly and breathing stops. Talking keeps the airways open, which may be why your mother told you not to talk while you're eating.

The oesophageal phase only lasts about three seconds, during which food or liquid enters the oesophagus, and is carried to the stomach.

It's a well-coordinated muscle interaction that most people never think about except on those occasions when something they're eating or drinking "goes down the wrong way". Then a gag or cough reflex will usually try to sort out the problem.

If, however, a stroke or other nervous system disorder interferes with the swallowing response, food pieces can block the passage of air, and food or liquid that stays in the airway can enter the lungs, resulting in aspiration pneumonia.

Dr Jurjāns was troubled by a high incidence of aspiration in his stroke unit, affecting up to 30 percent of patients. Here was something that might help. He translated the materials into Latvian and introduced them at his hospital in August, working with a nutritionist and speech therapists to give more substance to the Arrow Project guidelines.

It's too soon to measure the impact on aspiration rates, but there are clear upsides, including the fact that nurses are now empowered to evaluate a patient's abilities and they, together with nutritionists, can follow certain pathways for decision making about patient diets rather than only rely on their practical experience.



The pictograms aren't just helpful to the medical staff; they also help relatives to understand the patients' nutritional restrictions, Dr Jurjāns says.

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It is reasonable to believe, about any hospital that wins consecutive diamonds, that **they have made excellence a habit.**

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One problem he is still trying to solve is variability in the modified textures (categorized as nectar, honey and pudding) that make food safe to swallow for patients depending on their dysphagia score. Here, too, consistency will be the key to success.

### **‘Make sure he doesn't get worse’**

Dr Jurjāns's first encounter with a stroke patient was a baptism of fire on the first or second day of his neurology residency. He recalls that the doctor, having started thrombolysis, was called away and left him in charge with instructions to observe the patient and make notes every fifteen minutes. She left him with a terrifying parting shot: “She said make sure nothing gets worse.”

It was an anxious moment for the would-be neurologist who had actually wanted to become an orthopedist. When that program turned out to be full, he surprised

his mother by following her footsteps into neurology. They have the same surname and when a patient recently asked her if she was related to “that famous Dr Jurjāns” the first Dr Jurjāne wasn't altogether pleased, he reports. (She was undoubtedly also proud.)

He became a stroke specialist for the same reason he had wanted to do orthopedics – he wanted to get his hands dirty, and in neurology, stroke was where the action was.

“There is always something to fix,” Dr Jurjāns says. Even when you have to keep some of your awards in boxes because the display wall became too small. “It comes in waves for me. Inspiration comes and then I make a change, make something new.”

Some of these changes could appear insignificant – like a pictogram on a clipboard or the Angels Stroke Care at Home manual translated into Latvian to prevent aspiration after discharge – but they do the important work of saving lives.

On the stroke ward at the Regional University Hospital of Málaga where a brief to standardize nursing care developed into the Arrow Project, consistency is also delivering success. They entered the awards table at the end of 2023, and have just won their second consecutive diamond award.

It is reasonable to believe, about any hospital that wins consecutive diamonds, that they have made excellence a habit. Consistency counts. And if you keep doing it for long enough, you will eventually need a bigger wall.





# Next stop Astana

**The Kaunas Stroke Simulation Team went to Kazakhstan for the opening of the first simulation center in Central Asia. Doctors from Lithuania conducted a cross-national simulation training to equip Kazakh physicians with the skills and confidence to carry out the rapid expansion of stroke services in the country.**

“IT was Lev’s idea,” says Dr Sabina Medukhanova, a neurologist and public health specialist who heads up the Republican Coordination Center for Stroke Problems (RCCSP) in Astana, Kazakhstan. The fact is, they’d been thinking about it for some time – the impact a stroke simulation center could have on the region.

New stroke centers were popping up in Kazakhstan all the time, staffed by young and inexperienced physicians who needed to be trained. Sabina and Dr Yerzhan Adilbekov, a neurosurgeon and stroke specialist who is chairman of the Kazakh League of Stroke, reasoned that a stroke simulation center in Astana could even train doctors in neighboring countries.

The idea became more concrete in the autumn of 2023 when Sabina and some of her colleagues attended an Angels Train the Trainer workshop in Frankfurt, Germany. “I’d been talking to Lev,” Sabina says. “He told me no worries, I will organize it.”

A well-quipped simulation center (that had so far only been used to train trauma specialists) already existed at the newly constructed National Coordination Center for Emergency Medicine. And Angels consultant Lev Prystupik knew just where he would find experts to run the first simulation.

Since 2018, a state of the art simulation center in Kaunas, Lithuania, had transformed stroke training in Lithuania and become a catalyst for stroke care quality improvement in the region. Located at the Hospital of Lithuanian University of Health Sciences (LSMU), it benefited from the combined expertise of four stroke specialists – Prof Antanas Vaitkus and Dr Prof Vaidas Matijosaitis from the Department of Neurology at LSMU, and Dr Prof Aleksandras Vilionskis and Prof Dalius Jatuzis, respectively the head of the stroke center at Republican Vilnius University Hospital, and of the Clinic of Neurology and

Neurosurgery at Vilnius University. During ESOC 2024 in Basel this past May, this foursome received an ESO Spirit of Excellence Award in recognition of their contribution to stroke training in Eastern and Central Europe. The simulation in Astana would be only the second one conducted outside of their center, for which they would draw on recent experience in Moldova.

Dr Aleksandras Vilionskis was no stranger to the Kazakh stroke community, having on more than one occasion lead training at the annual School of Stroke in Kazakhstan. But for Dr Matijosaitis who accompanied him, the visit to Astana in October 2024 would be his first.

## Learning while laughing

Kazakhstan’s stroke services have seen significant improvement since 2016 after the ministry of health approved a four-year implementation roadmap for stroke management. Thrombolysis rates have increased from 1.33% in 2016 to 5.40% in the first half of 2024; and the rates for endovascular thrombectomy have risen from 0.05% to 2.10%. At the same time, the number of stroke centers has increased from 40 to 81, comprising 30 comprehensive stroke centers and 51 primary stroke centers.



The School of Stroke scientific and practical conference has taken place every year since 2017, bringing together experts who are passionate about improving stroke treatment and care. Success has followed. Shortly after the simulation workshop in October, it was announced that five Kazakh hospitals had won ESO Angels diamond awards in Q3 of 2024, three more than the previous year.

Of course more stroke centers meant more doctors had to be trained in how to implement treatment guidelines and optimize their stroke pathway. This, along with a focus on quality and outcomes, accounted for the significance of October's inaugural stroke simulation. The stroke specialists who attended would subsequently spread their knowledge to colleagues at their own hospitals.

"It was a great experience for our physicians," Sabina says of the two days of masterclasses, pathway simulations and decision-making workshops. "It was very, very interactive and everyone enjoyed the role-playing, they had a great time. When people learn by laughing, the learning sticks." The enthusiasm carried over onto social media, creating a demand for more such interventions. "A lot of physicians who weren't part of it also now want that kind of workshop," Sabina says.

He could generally gauge the success of a simulation by the questions asked, Vaidas says, adding that Q&A sessions in Astana had elicited even some controversial questions the participants might not have felt comfortable about raising elsewhere.

The simulation boosted both knowledge and confidence, Lev concurs. "It was a safe space where doctors could share their experiences and talk openly about how things were done at their own hospitals without being afraid to raise certain topics and issues."

Representatives of the World Health Organization (WHO) and

a government health think tank were also present, and the WHO subsequently recommended the Angels Academy as an education platform in a letter to the Minister of Health.

### The Kaunas-Astana connection

Lev explains why a stroke simulation center in Astana is important. For doctors from Kazakhstan and its neighboring countries, attending similar events thousands of kilometers away in countries like Germany was costly for a start. "But it's also a matter of access, with visa requirements and sometimes political reasons acting as barriers," he explains. And then there's the matter of language.

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Even if there are differences in the system, we all share the same aim, which is to help people with stroke.

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Lithuania and Kazakhstan both come from a Soviet past. After the countries regained their independence they had different development pathways, but doctors from the older generation in Lithuania are still able to use Russian for communication which allows them to share their knowledge and experience.

Lithuania is a few years ahead of Kazakhstan in terms of stroke care access, with their own breakthrough occurring in 2014 when the national stroke care network was established. As well as the transfer of skills, the Kaunas-Astana partnership allows Kazakhstan to learn from and be



encouraged by Lithuania's proud decade of stroke care development.

But since learning is a two-way street, what new insights did the Lithuanian doctors carry home?

Aleksandras Vilionskis says the important lessons have to do with understanding the specific and systemic problems encountered by hospitals in Kazakhstan and adapting their simulation for local conditions. He says future events are likely to include in-situ simulations at participating hospitals so they can observe the pathway from door to treatment and pinpoint the gaps that are causing delays in those hospitals.

For Vaidas Matijosaitis on his first visit to Kazakhstan, the experience confirmed something he already knew. He says, "Even if there are differences in the system, we all share the same aim, which is to help people with stroke. That is the same no matter where we go."







# A plan comes together in Mendoza

In Mendoza in Argentina we raise our glasses to a telestroke success story involving two doctors – one who had the misfortune of suffering a stroke, and one who had the privilege of treating him.

MENDOZA is wine country. More than 70 percent of the wine produced in Argentina is made in this west central province backing onto the Andes mountain range, and the capital city, also named Mendoza, keeps company with Bordeaux and San Francisco on the list of great wine capitals of the world.

The province is home to around two million people for whom access to quality healthcare is largely determined by location. Angels consultant Romina Delgado says that, with most of the population living in Greater Mendoza and vast distances separating the different urban centers, a telemedicine network conceived in August 2021 was the answer to maximizing the availability of stroke care in the province. And in March this year this network delivered a story so good that it would be a sin not to celebrate it with a glass of the local malbec or chardonnay.

Back when they were planning the network, thrombolysis was available at only two public hospitals, both

located in the city of Mendoza. Only one of these, Luis Lagomaggiore Hospital, had a neurology department. Five more hospitals in the province, the furthest of which was 350 km away from the capital, had the potential to become stroke centers but lacked the necessary

healthcare teams at the peripheral hospitals. Angels would support the progressive implementation of this program by conducting training at each of these institutions in turn, with the aim to optimize human resources, provide better treatment and reduce unnecessary delays and transfers."

Planning of the network began in August 2021 and in March 2022 training commenced at the Central Telestroke Unit (UTAC) located in the Luis Lagomaggiore Hospital, and the first Peripheral Telestroke Unit (UTAP) located in the Malargüe Regional Hospital, 350 km away. Five months later, on 25 August, the telestroke network, TeleAVC, was formally launched, and the first patient evaluated and treated the very next day.

The next two UTAPS joined a year later in August 2023. Hospital Regional Antonio J. Scaravelli in Tunuyán and Hospital Enfermeros Argentinos in General Alvear, respectively 80 and 350 km from Mendoza, were similar to the one in Malargüe. Both had a CT scanner and intensive care unit and offered

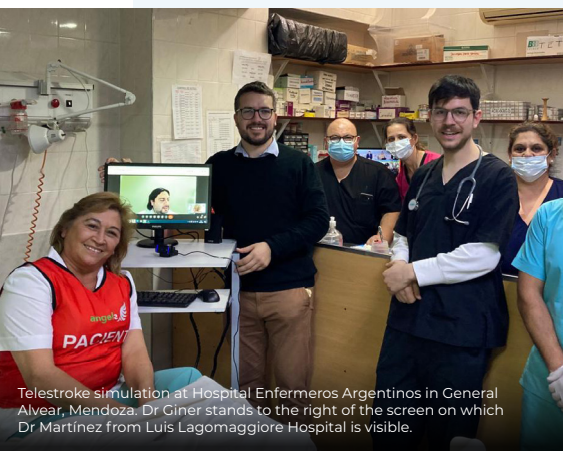
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It was at Hospital Enfermeros Argentinos that this story would unfold.

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knowledge and management protocols, leaving a large part of the population vulnerable.

Romina says, "It was in this context of great distances and scarce personnel trained in stroke that the possibility arose for a telemedicine network in which the neurology team in the capital could assist



Telestroke simulation at Hospital Enfermeros Argentinos in General Alvear, Mendoza. Dr Giner stands to the right of the screen on which Dr Martínez from Luis Lagomaggiore Hospital is visible.

round-the-clock care, but neither had a neurology department. It was at Hospital Enfermeros Argentinos that this story would unfold.

Dr Federico Giner is a neurologist and stroke coordinator at Luis Lagomaggiore Hospital, and coordinator of TeleAVC in Mendoza. He explains how the telestroke network operates: "Patients are evaluated by the UTPA's on-call team and if a stroke is suspected, a call to the UTAC neurologist will notify them to go to the telestroke room. The patient is moved to the tomography room for a CT scan and then to the ICU. Here a synchronous video call is established through which the neurologist interacts with the UTAP's on-call team and with the patient to conduct an NIHSS examination, evaluate the CT scan and complete the checklist.

"If thrombolysis is indicated, a second consultation will be carried out at the end of the infusion during which the neurologist will make recommendations for post-acute care and secondary prevention."

Three pillars will ultimately determine the future success of the network, Dr Giner says. "Teamwork to empower the UTAP staff, change management, and registration and monitoring of results to facilitate continuous improvement."

There are still obstacles to overcome, but in March this year the network proved its worth by saving one of its own.

Dr Giner recalls: "It happened on Friday afternoon, March 22, 2024, a day when I'm usually the teleneuro on duty in the UTAC but on this occasion it was Dr Federico Martínez, a member of the teleneurology staff, who received the call at seven minutes past two. Seven minutes earlier at 2 pm, Dr Alejandro Torres, an anesthesiologist and Executive Director of Hospital Enfermeros Argentinos, upon arriving home had suddenly developed a speech disorder and difficulty walking. Suspecting a stroke, his wife had called the ambulance which delivered Dr Torres to his own hospital at twenty past two, 13 minutes after Dr Martínez took the call.

"A CT scan was performed at 2.34 pm and a subsequent video consultation confirmed an NIHSS score of 4. Dr Torres's symptoms included facial hypoesthesia,

dysarthria and mild aphasia, and he was hypertensive with blood pressure 220/120 mmHg. He was treated with Labetalol until his pressure stabilized and thrombolytic treatment commenced at 2:55 pm, just 55 minutes after symptom onset."

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There's no doubt that the **coordinated actions of the entire stroke survival chain** are the reason Dr Torres received treatment in time.

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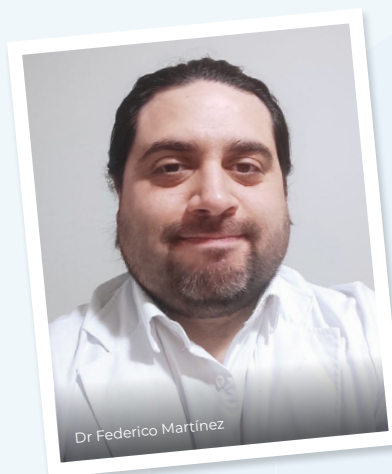
Although the NIHSS score was low, the symptoms that Dr Torres presented were disabling and, left untreated, would have prevented him from resuming

his usual activities, Dr Giner says. "Furthermore, his postural instability was not scored in the NIHSS, a clear example that the NIHSS score should not be the only consideration when making the therapeutic decision."

Dr Torres's recovery was swift and within two weeks of the episode he was back at work and presiding over a public ceremony at his hospital. Having been diagnosed with paroxysmal atrial fibrillation he had started treatment with anticoagulants and was otherwise good as new.

Dr Giner says, "There's no doubt that the coordinated actions of the entire stroke survival chain – from symptom recognition and the actions of both the UTAP's on-call team and the UTAC neurologist to subsequent care – are the reason Dr Torres received treatment in time."

A story with such a happy outcome also calls for a toast to Dr Martínez, the young neurologist and former chief resident at Luis Lagomaggiore who was on duty when the telestroke network gave Dr Torres a second chance at life.



Dr Federico Martínez



Dr Federico Giner



From left: Dr Alejandro Torres, Angels consultant Romina Delgado and Mr Alejandro Molero, mayor of General Alvear, Mendoza.





# Shija hospitals mark a milestone in Manipur

The story of Shija Hospitals and the Angels Initiative stands as a beacon of hope – a testament to what can be achieved when healthcare systems are optimized, communities work together, and lives are prioritized.

THE director of Shija Hospitals and Research Institute (SHRI), Dr Palin Khundongbam, is overwhelmed with pride as he looks at how far the institution has come in just two years. He says, “When we began this journey, we had a simple goal – to save as many lives as possible and improve the quality of stroke care in our state.

“What we achieved with the Angels Initiative goes beyond that. It has transformed SHRI into a center of excellence. We are deeply grateful to Angels for their expertise and guidance. This recognition is a collective achievement, and we are just getting started.”

Indeed, for the team at Shija Hospitals, the recognition is not the end—it is only the beginning. Now a diamond hospital, they are more determined than ever to expand their stroke care services and continue their mission to save lives.



Their partnership with Angels will continue, as they look forward to further training, outreach, and community awareness programs, ensuring that more people in Manipur benefit from timely, world-class stroke care.

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In regions with limited access to specialized care, the consequences of a stroke can be devastating.

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Manipur, the “Jewel of India”, is a state where beauty and resilience coexist. Nestled in the northeastern corner of the country, bordered by Myanmar, it is a land of rich culture, lush hills, and serene lakes. But beneath its breathtaking landscapes and historical significance lies a pressing healthcare challenge.

The state, like much of the northeast, faces significant gaps in specialized medical care, particularly in the field of stroke treatment. In regions with limited access to specialized care, the consequences of a stroke can be devastating. Moreover, with its remote villages, challenging terrain, and sometimes disrupted communication lines, improving stroke care is a crucial priority.





In 2022, the Angels Initiative India held a meeting with the central government of India during which team leader William Masih explained the impact of Angels on improving the stroke care ecosystem through capacity building and pathway optimization. Also present in the meeting was an eminent decision maker, Mr. Luis (name altered for data privacy) of northeast India, who approached William about the potential for improving stroke care in the state of Manipur.

Luis's father had suffered a stroke but with limited access to stroke treatment in their state little could be done for him. The son's pain made him long to find a solution around stroke, and support for his vision to make his state stroke-free.

On 10 November 2022, William and Sasmita Ambatkar, Angels Lead for East and West India, visited Imphal, the capital of Manipur, to observe its healthcare infrastructure. A meeting had been scheduled with all four medical colleges, Jawaharlal Nehru Medical College, Regional Medical College, Chora Chand Medical College and Shija Medical College and Hospital. William

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After months of hard work, relentless dedication, and overcoming numerous obstacles, **Shija Hospitals and Angels** saw the fruits of their labor.

and Sasmita were thrilled as it was a breath-taking experience, a first time visit to this corner of country. The long journey and the mesmerizing beauty of the state from the air, including the view of Loktak lake, the world's only floating national park, infused them with energy and strengthened their commitment to make Manipur stroke-free.

An emergency prevented Luis from joining them on this visit but, rather than reschedule, William and Sasmita met with each hospital separately, observed the stroke pathway and made recommendations for improvement.

Back at the office, preparation began for an event to launch the program in Manipur. Angels consultant Nilotpal Kumar was brought on board and was excited to take on the assignment. On 24 February, William, Sasmita

and Nilotpal traveled to Manipur for a meeting where Angels was the guest of honour. William introduced Angels and mapped out the vision for Stroke-Free Manipur with clear milestones and a draft roadmap. Luis ensured all the hospitals' concerns were heard and assured them of his wholehearted support.

During the meeting, the director of Shija Hospitals and Research Institute (SHRI), Dr Palin Khundongbam, came forward and expressed his desire for Shija to become a center for excellence. From their previous visit, the team knew that Shija was a stroke-treating hospital that met all the criteria for stroke readiness.

The Angels Initiative's collaboration with Shija Hospitals formally began in May 2023 and marked a turning point for stroke care in Manipur. The focus was immediate – to reduce the critical door-to-needle time, minimize treatment delays, and ensure that stroke patients receive timely, high-quality care from the minute they entered the emergency room. The goal of the collaboration was not just to treat strokes—but to create a comprehensive stroke care facility in Manipur.

Together, the teams from Shija Hospitals and Angels worked tirelessly on optimizing protocols, implementing checklists, and using data-driven quality monitoring to ensure that every stroke patient was treated as quickly



and effectively as possible. By standardizing procedures and reducing variability in care, they were able to improve critical response times and achieve better outcomes for patients.

The journey was not without its challenges. Manipur, a state that had faced its own social and political upheaval, was caught in a period of unrest in the summer of 2023. Inter-community clashes and instability affected daily life and made the work of medical professionals even more challenging. Despite these dark days, the teams at Shija Hospitals never wavered in their commitment. They continued their work even when the streets outside were filled with turmoil.

After months of hard work, relentless dedication, and overcoming numerous obstacles, Shija Hospitals and Angels saw the fruits of their labor. Their unwavering efforts were recognized when Shija Hospitals and Research Institute won diamond status in the WSO Angels Awards. This award is a symbol of the hospital's commitment to providing world-class stroke treatment, and it placed SHRI among the top healthcare institutions globally for stroke care.



This recognition is not just a badge of honor for the hospital but a testament to the power of collaboration and perseverance. It is proof that even in the face of adversity—be it the challenges of a difficult geography, socio-political unrest, or the complexities of stroke treatment—great things can be achieved when dedicated professionals come together with a singular goal: to save lives.

As Manipur emerges stronger from its challenges, the story of Shija Hospitals and the Angels Initiative stands as a beacon of hope—a testament to what can be achieved when healthcare systems are optimized, communities work together, and lives are prioritized. The future of stroke care in the state is brighter than ever, and with continued dedication and innovation, the team at SHRI is poised to lead the way for years to come.





# Badge of honor



**Ecuador is bursting with pride over its first EMS Angels Award for excellence in prehospital stroke care. Dr Verónica Pacheco maps out their journey to international recognition.**

YOU may notice something different about the paramedics working in prehospital coordination zones 2 and 9 in Pinchincha Province. One is that they are wearing an unmistakable air of pride. The second is the reason they're holding their heads so high – Angels badges on their left sleeves mark them out as winners of Ecuador's first EMS Angels Award for excellence in prehospital stroke care.

The presentation of these badges to the operational staff was a highlight of the award ceremony in Quito, says Dr Verónica Pacheco, emergency physician and specialist in the National Directorate of Mobile Health Care Services of Ecuador's Ministry of Public Health.

"This acknowledgement is of great importance, since the work carried out by prehospital care services is not usually recognized. Having these badges awarded by the Minister of Public Health, Dr Antonio Naranjo Paz y Miño, heightened the positive impact. It was a significant and emotional moment that will motivate other teams in the country to strive towards this award."

Dr Pacheco has had no small part in this achievement. She led the development of the first national

protocol for prehospital stroke care in Latin America, formulating guidelines that are now being implemented throughout the country.



**The creation of the protocol for prehospital stroke care and its implementation in both the public and private sectors was a vital first step.**



As the custodian of an agreement between the Angels Initiative and the Ministry of Public Health, Dr Pacheco plays a key role facilitating the training of healthcare professionals in the proper management of stroke, including simulations conducted in public hospitals. The result of these efforts is the expansion of both prehospital stroke care coverage and of the network of accredited stroke centers, with hospitals in Tena,

Macas and Latacunga shortly due for certification along with General Hospital Enrique Garcés in Quito.

Long distances separating towns and small cities from stroke-ready hospitals place heavy demands on emergency medical transport services, making the replacement of ambulance units a priority, Dr Pacheco says. Currently, 158 advanced life support ambulances are being delivered to strategic locations to provide adequate coverage for patients needing urgent care, including for stroke.

The creation of the protocol for prehospital stroke care and its implementation in both the public and private sectors was a vital first step. The protocol was shaped by a process of meetings with operational staff and consultations with emergency physicians, Dr Pacheco says. One of their objectives was standardizing the use of scales in prehospital evaluation; in the end they opted for three scales that are adaptable to the current reality of the health system.

Another priority is the provision of in-person training, frequently by





doctors who were involved in writing the guidelines. The impact of this personal approach to training is similar to that of winning awards, Dr Pacheco suggests. In both instances it encourages ambulance staff by instilling a sense of belonging, and the awareness that they are a very important part of any stroke care team.

The prehospital care teams in Zone 2 and Zone 9 began their awards journey in May 2024. In June a review of their data showed they fell short of the mark in two of the areas covered by the awards criteria. Dr Pacheco explains: "Because in Ecuador we require hospital acceptance before a patient can be transported to a hospital, our on-scene times exceeded those stipulated in the quality parameters. Our prehospital staff also weren't recording patient medications, information which is crucial for the decision to treat stroke."

Among measures to address these shortcomings was the implementation of Código Rojo (code red) which eliminates the need for prior acceptance by hospitals for patients with stroke. Instead, hospitals are prenotified that a stroke patient is on the way.

Improving the standard of prehospital care completes the circle of quality care for stroke patients,

Dr Pacheco says. "It is important for hospital and ambulance teams to have good relationships, speak the same language and work together to optimize times and save as many lives as we can in our country."

Medicine runs in her family, Dr Pacheco says. Her father and two brothers are also doctors and their mom is a nurse, so the impulse to help people is part of her DNA. But it was saving lives that drew her to emergency medicine, she says.

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**Saving lives and giving someone back their family or their quality of life, has been crucial in my life.**

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"It is truly my passion to be there at the moment people need me, the moment someone arrives needing emergency care, and having the opportunity to provide help and save a life. Above all to be there in that moment that is so difficult for all

people, and to provide care calmly."

She loves emergency medicine, Dr Pacheco says. "I wouldn't change my specialty for anything. It has been a very important factor in my life. It has allowed me to be there in many difficult moments for certain people, to save lives and to give someone back their family or their quality of life. That has been crucial in my life."

Quality stroke care also saves lives, and the rollout of stroke protocol implementation across the prehospital sector gives Dr Pacheco and her team a vast platform for doing what she loves. Pinchicha is only the starting point, she says. "We started working in this area because this is where the capital city is located and the largest concentration of people needing care. We knew that if we won this award we could use what we learnt to develop strategies for smaller prehospital teams or those that work in less densely populated areas. We know we have to adapt and modify our approach to succeed in all the regions or provinces in Ecuador, and we are achieving that.

"I think that within just a few months there will be another prehospital team standing on a stage to be recognized for the quality of their stroke care."

You'll be able to tell them apart by the white wing on their left sleeve.



# Counting on community in Khmelnytskyi

The three districts that make up Khmelnytska Oblast weren't obvious candidates to become Ukraine's first Angels Regions – but proactive leadership and purposeful community building ensured their place in the record books.



From left, Dr. Sergii Moskovko, Tamara and Lev.

WHEN choosing a venue for the January get-together where the three districts of Khmelnytska Oblast will celebrate becoming Ukraine's first Angels Regions, one of the chief requirements will be a sturdy and capacious bomb shelter. Though Khmelnytskyi is located in the west of the country, the war has been edging closer. A nuclear power plant near Netishyn in the most northern district of the oblast was recently targeted by Russian missiles and drones. There will nevertheless be a great deal to celebrate.

This jarring reality brought about by a 1000-day-old war makes it all the more remarkable that Ukraine is among the first countries in Europe to convert Angels Regions.

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Not much attention had been paid to this region and **we felt we could help a lot of people there.**

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When the 100 Angels Regions strategy was launched at the start of 2024, consultants Lev Prystupiuk

and Tamara Zabashta knew that their regional conversion process would have to address the needs of a population fractured and exhausted by two years of Covid and three years of war. Security was part of the reason why they decided to start with Khmelnytskyi – it was, or at least appeared to be, at a safe distance from the war. But even more than that they wanted to focus their efforts on a region that needed help fast, Tamara says. “Not much attention had been paid to this region and we felt we could help a lot of people there.” And as they soon found out, Deputy Director of the Department of Health in Khmelnytska Oblast, Tetyana Kosovska, would be a powerful ally.

Khmelnytska Oblast consists of three districts or administrative raions – in order from south

to north, Khmelnytskyi Raion, Kamianets-Podilskyi Raion, and Shepetivskyi Raion. The stroke network consists of 10 hospitals, evenly distributed across the territory but all at various stages of their stroke care journey, and a central EMS.

For a region to become an Angels Region, hospitals, emergency services, local authorities and public educators all have to work together towards a shared goal – to make their community safe for stroke.







But in Khmelnytska Oblast, the pandemic and then the war had worn away at the connections that bind a society together and across the region people were struggling with exhaustion from air alerts disrupting their sleep and their work.

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Lev and Tamara wanted everyone in the region to work together, and they practised what they preached.

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Lev and Tamara set out to rebuild a community in which everyone felt supported – by the authorities, by Angels and by each other. Their goals were to create a community of hospitals, cooperate with local health and educational authorities, and instill a culture of teamwork in the region. Working methodically, they identified the main challenges and drew up an action plan for each, then broke it down into an integrated program of scheduled meetings, trainings and follow-ups across four quarters. These included emphasizing the importance of quality monitoring in round table discussions and regional training sessions; providing training on fast-

track systems for stroke patients to address hospital admission delays; training to support decision making, and introducing measures to improve public awareness.

Lev and Tamara wanted everyone in the region to work together, and they practised what they preached. They drew up a spreadsheet that detailed the activities for each month, but didn't divide up the duties. Instead, they worked as a team, ticking the boxes as they went.

Quarter two was the most challenging one, Tamara says. The Khmelnytskyi group was split into two for the Angels Initiative stroke simulation training in Kyiv and Lutsk, in addition to neurologist training, RES-Q trainings, an EMS simulations, and consultancy visits to all 10 hospitals. They also got to participate in national events such as the Ukrainian Stroke Medicine Society's Stroke National Conference and the Schools for Young Neurologists.

The minimum criteria for Angels Regions status is an ESO Angels gold award for every hospital and EMS. In Khmelnytskyi like elsewhere, some hospitals started out with an advantage while others had some catching up to do. But Lev and Tamara, mindful of teamwork, deliberately steered clear from singling out hospitals for their awards status.

“It wasn't a case of this is a gold and this is a diamond hospital or this is Lev's hospital or mine,” Tamara says.

“Our priority was to become a ‘gold region’, and for everyone to achieve it together.”

Every team needs a cheerleader and health Deputy Director Tetyana Kosovska was both enthusiastic and proactive about Khmelnytskyi's three districts becoming the first Angels Regions in Ukraine. Her good leadership made it easy and she was a regular participant in the program, Tamara says. “She really understood the deepest sense of this work.”

Khmelnytskyi Raion and Kamianets-Podilskyi Raion were first to attain Angels Region status, with Shepetivskyi Raion expected to join them as soon as the quarter four results are official. But the region has achieved something even more profound and worthy of celebration: The campaign to become an Angels Region has strengthened their community with the knowledge that they can count on each other for support.



# Courage, stamina & dreams

Doctors from the first two hospitals in Iraq to receive international recognition for stroke care excellence share their stories.

*"Some men see things as they are and ask why. I dream things that never were and ask why not."* – George Bernard Shaw

In January 2023, in Sulaymaniyah in the Kurdistan region of Iraq, a dream came true for a man who dreamed of things that never were. The thing that wasn't – not here nor anywhere in Iraq – was a stroke unit that would provide world-class care to the people living in and around the Sulayman capital.

It had been an exceptionally long dream – the kind that feels as if they span across an entire night, only this one had lasted all of eight years. For eight years Dr Zana Abdulrahman had been asking why not, and each time the answer had been yet another obstacle in

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Eight years of dreaming and planning meant that when Dr Zana's stroke unit finally opened with funding secured from an NGO, **it already had the hallmarks of success.**

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the way of progress and treating stroke patients according to global standards.

Stroke patients at this and other Iraqi hospitals were being diagnosed and discharged to such a life as remained to them, after receiving little more than nursing care and aspirin. Dr Zana knew the burden that awaited them and their families, the financial difficulties, the months of rehab, all while global developments in stroke care promised a different outcome. Driven by “personal feeling towards patients” and buoyed by a team of likeminded young doctors, he dreamed Iraq's first stroke unit into existence.

## 'It's for every patient'

To open a new stroke unit you need a person with courage and leadership, says Dr Safin Siwaili, a senior neurology resident at Shar Hospital. He and his fellow residents, Drs Kaiwan Kawa and Mardin Abdulkarim, are grateful for these qualities in their teacher and department head, and for finding themselves in the vanguard of stroke transformation in Iraq.

Eight years of dreaming and planning meant that when Dr





Zana's stroke unit finally opened with funding secured from an NGO, it already had the hallmarks of success. The tailor-made protocol included a vigilant stroke nurse in the ER, rapid triage, priority access to CT, a round-the-clock neurology service, a dedicated elevator to minimize delays, and a focus on improvement from day one.

Continuous improvement is marked on the calendar; there's a monthly meeting, in the last week of every month, to discuss all their cases, and a quarterly meeting to assess their performance of the previous three months, review their protocol and discuss what they could've done better.

Of the over 300 patients that have already received thrombolysis in Dr Zana's stroke unit, there are, inevitably, those that stand out. For Dr Safin it was a widowed mother of three who had arrived with an NIHSS score of 15 and went home free of disability.

"They are all important," Dr Safin. "But I remember her as being the most important, because it changed the outcome for her family."

In a different setting this woman from a poor family might not have been able to afford the life-saving

treatment, but in Dr Zana's stroke unit, patients are treated for free. "It's for every patient," Dr Safin says.

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This award is  
testimony to our  
energy and potential.

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For his colleague, Dr Mardin Abdulkarim, the moment is gravest when the patient on the gurney is someone you know. Having treated both a cousin and the sister of a colleague, he says: "For every patient there's the possibility of complications but when they are close to you, decision making comes with a different kind of stress."

### Reaching our potential

The key to managing the stress is a very clear, very specific protocol,

says Dr Kaiwan Kawa who joined in April this year and strikes a pragmatic note: "You cannot allow the hope of making a difference to make you forget reality. The dream of a stroke unit is really good, but you mustn't forget to keep your feet on the ground."

If you have trouble keeping your feet on the ground, the healthcare scenario in Kurdistan might just do it for you. Amid a severe financial crisis in the region, working conditions are less than ideal and salary delays are not uncommon. The drive to deliver world-class care in this context comes from seeing the impact on patients' lives, and the improved care and outcomes that result from small changes made day by day.

"This is the driving force for most of us," Dr Mardin says. "As neurologists we derive a high degree of personal satisfaction from seeing the impact of early intervention, and the progress made by someone who would've been disabled if there was no stroke unit."

The product of Dr Zana's courage and leadership has now brought the stroke team of Shar Hospital recognition beyond their dreams. As winners (together with Al-Diwaniyah Teaching Hospital) of Iraq's first WSO Angels Awards, they stand shoulder to shoulder with the best stroke-treating hospitals in the world – and the significance of this is greater than stroke.

Dr Kaiwan explains: "This award is proof that the doctors and nurses in Iraq have the capacity to achieve something great; it is a testimony to our energy and potential. The award gives us a standpoint, a hope. It means we can say to young people, look, we are capable. We are capable of making big changes and reaching our potential."



***"All men dream: but not equally. Those who dream by night in the dusty recesses of their minds wake up in the day to find it was vanity, but the dreamers of the day are dangerous men, for they may act their dreams with open eyes, to make it possible."***

— T.E. Lawrence.

At Al-Diwaniyah Teaching Hospital about 500 km south of



Sulaymaniyah, we meet a man who dreams by day and makes things possible.

During his training in neurology Dr Mustafa Al-Shahni would often see patients in the disastrous aftermath of stroke, aware there was nothing he could do for them.

He says, "I knew there were advanced treatments but they weren't being implemented here." He promised himself that once he graduated, he would change all that, and at the end of 2022 he set out to keep his promise.

"I started from zero," he says. "No one had done this before me."

It took six months for Dr Mustafa to equip himself with enough knowledge and experience to carry out his plan. He watched a series of educational videos created by the Middle East North Africa Stroke Organization, and visited hospitals in Turkey and Dubai. He had no stroke unit, but an internist at his hospital was prepared to admit Dr Mustafa's patients to his coronary care unit.

Then, on May 12, 2023, it was reported by the media office of the Diwaniyah Health Department that "a medical team headed by specialist doctor Mustafa Karim Al-Shahni at Al Diwaniya Teaching Hospital managed to save an 80-year-old patient from semi-paralysis".

Dr Mustafa vividly remembers the conflicting feelings of fear and success that marked this landmark point in his career. Soon afterwards, he set out on a journey to help other doctors in Iraq overcome the same fear.

The Iraqi Stroke Network held its first meeting on World Stroke Day 2023 and that December launched a webinar series to spread knowledge and share experience. The first goal of the network is to "build stamina inside neurologists," Dr Mustafa says. The second is to help build stroke units; the third, which is written into the blueprint of the organization, is to study stroke in Iraq. Initial research on the epidemiology of stroke in Diwaniyah governorate was presented at the WSC in Abu Dhabi in October. Pursuing work in this field is Dr Mustafa's dream.

### 'I thought perhaps they were wrong'

Dr Mustafa says he chose neurology because he was attracted by the challenge. "I'd heard while studying that it was a vague topic. They said it was useless; your patients won't recover. But I thought that perhaps they were wrong."

Proof of just how wrong they were is in the WSO Angels Award with which Dr Mustafa's work has been recognized on the international stage. But it is present even more emphatically in the continued

health and good fortune of a staff nurse at Al-Diwaniyah Teaching Hospital who had a stroke at the age of 39. He was diagnosed within 20 minutes of symptom onset, and after being treatment with thrombolysis his condition improved partially.

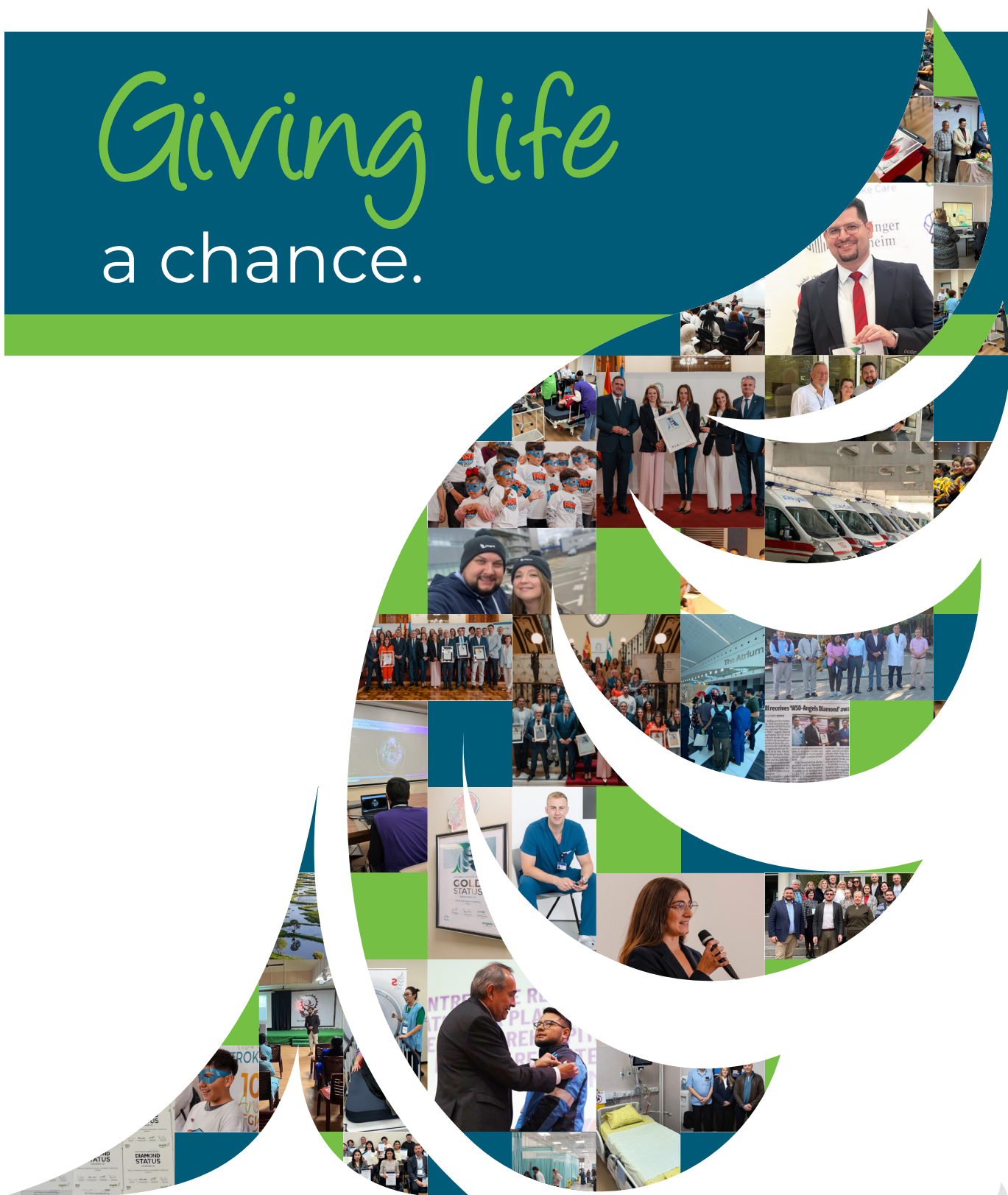
Dr Mustafa recalls, "I got into an ambulance with him and we traveled to a city about an hour away so he could undergo mechanical thrombectomy. He recovered well and I see him frequently here in the hospital.

"I get to see my success every week."





# Giving life a chance.



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