THE *Angels* INITIATIVE AROUND *Europe*

Ukraine | Madeira | Slovakia | Poland | Italy | Tuscany | Czech Republic | Romania | Bulgaria | Portugal | Hungary | Spain

angels

LEAVE YOUR LEGACY

Ukraine

An island in the storm

"Go to Vietnam and find a solution for child malnutrition in the 10,000 plus impoverished villages there.

Oh, and by the way Jerry, you have 6 months to show results."

This was the challenge given to Jerry Sternin back in 1990. Fast forward 20 years and now millions of children in Vietnam run around in flowing rice fields, seemingly with enough energy to last them all week. How did he do it you ask, by looking for bigger, more well fed kids, the bright spots in the villages, and creating a space where their moms could share their secret recipes with the moms of malnourished kids in village led cooking groups.

Launching a stroke project in a country with a nationwide recanalization procedure rate of less than 1% is no less daunting. For many patients in Ukraine, a stroke is a fatal diagnosis. Even with recent efforts to improve the awareness and treatment of stroke, the level of care is still wildly inconsistent. That is except for in one small city 260km south-west of Kyiv called Vinnytsia.

Approaching the hospital feels like stepping into an old sixties James Bond movie, but move inside to the stroke unit and you will find a beacon of hope. The stroke team under the leadership of Prof. Sergii Moskovko is able to treat in excess of 20% of their patients. In fact they treat more patients with recanalization therapy than all other stroke ready hospitals in Ukraine combined. It is no wonder then that when the Angels Initiative consultants started their activities in the field the first place they went to learn was Prof. Moskovko's clinic.

In our experience from implementing Angels in other low – and middle income countries we've learned that there are often a thousand different reasons for why the situation is what it is and why it is impossible to change. It's not that those issues did not exist in Vinnytsia, it's just that they were considered TBU – True But Useless. There was no challenge that was not solvable with a practical local solution.

With a bag full of tried and tested local solutions, a mentor in Prof. Moskovko and renewed motivation that maybe, just maybe this time we can make a lasting difference, the Angels Initiative was launched in Ukriane. It was attended by 700 strokeologists from all regions of the country, including prominent experts like former Minister of Health and President of the Ukrainian Anti-Stroke Association - Prof. Mykola Polishchuk, Chief neurologist - Prof. Tamara Mischenko, Chief neurosurgeon - Prof. Eugen Pedachenko, Chief internist - Prof. Vasyl Netiazhenko, and of course, Prof. Moskovko, who had now become the National Coordinator of the Angels Initiative in Ukraine.

Since then the initiative; now with a distinct Vinnytsia flavour, is busy being implemented across the country and has caused quite a stir. It has been officially endorsed by the Ukrainian Anti-Stroke Association; the Society of Neurologists, Psychiatrists and Narcologists of Ukraine; the Association of Internal Medicine Doctors of Ukraine and the Ukrainian Association of Neurosurgeons.

It is very early in our journey, but the Angels Initiative in Ukraine has gained a momentum never before experienced in the country. From a standing start and with the motivation of Prof. Moskovko and the endorsement of the entire Ukrainian medical profession, the Angels network goes beyond simply adding value. It is proving that no matter what the situation, a solution is often only one bright spot away.

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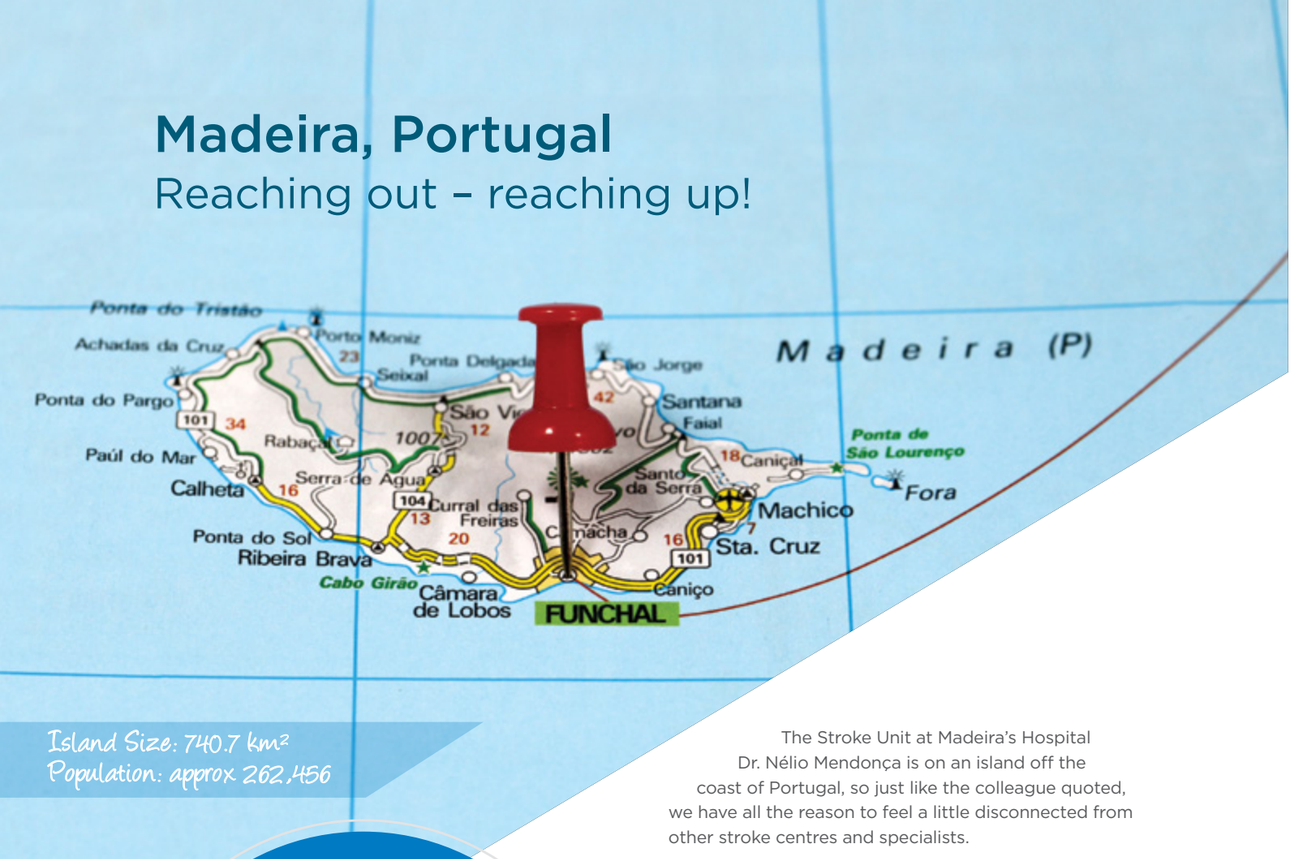
Madeira, Portugal

Reaching out – reaching up!



Island Size: 740.7 km²
Population: approx 262.456

"Every time I give the bolus my stomach turns, even to this day. Treating a stroke patient with potentially dangerous medication is scary, especially in the beginning. I remember when we started treating patients some years ago other doctors criticized us. You're not doing it for the patients, you're doing it for yourself they said. I felt like I was alone on an island with no one around to help or support me on my quest for better outcomes."

(Polish strokologist, Angels Initiative kick-off meeting, Mainz)

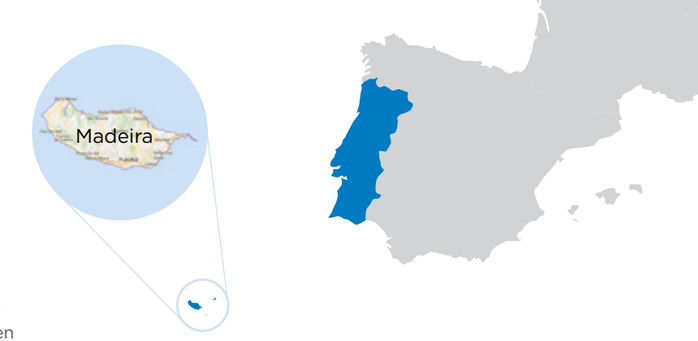
The Stroke Unit at Madeira's Hospital Dr. Nélio Mendonça is on an island off the coast of Portugal, so just like the colleague quoted, we have all the reason to feel a little disconnected from other stroke centres and specialists.

Our Stroke Unit was officially opened in July 2009, with 4 beds dedicated to acute stroke. The distance between Madeira and Continental Portugal obliged our Stroke Centre to include endovascular intervention, which we are now proud to be able to offer since March this year. This was a great achievement for all the team and we believe will have a high impact on the stroke patients and their families.

We decided to join the Angels Initiative in November 2016 because we saw the opportunity to become part of something bigger. We were reaching for higher performance and desperately wanted to improve our outcomes, but felt we should also reach out. We could do with a bit more knowledge about what others in Portugal and in the rest of Europe are doing to improve their outcomes.

For some, being part of a community might mean physically being together on a weekly or monthly basis to share ideas or build relationships, for us the Angels community took a slightly different form.

It started with our nurses who were exposed to on-line stroke nurse e-learning modules. It was great as it has allowed us to standardize the level of knowledge within the nursing team.



The Body Interact clinical case simulations provided the stroke team with an excellent platform to sharpen our clinical decision making skills which has really helped us also in real life scenarios.

Even though we were not in the same room as our colleagues from the mainland we were already starting to feel that our standards were getting more aligned.

Data collection is the bane of all of our lives but Claudia managed to convince us that the only way to really compare ourselves with hospitals elsewhere would be to start with some data collection. We have now started using the Angels Plus tool and hope that this would allow us to not only track our progress, but also do some benchmarking with our colleagues on the mainland. Nothing motivates like a bit of healthy competition.

If we ask our stroke team which of the elements that Claudia introduced to our stroke unit has helped the most in terms of every day work, it would probably be the introduction of checklists. Of course we had protocols, but if we had to be honest, it was not really something we referred to on a daily basis. This caused a lot of variability in treatment practices. Claudia helped us transform our protocols into easy to use checklists based on the examples they put together with the help of expert advisors. We now use these checklists for every patient we treat knowing that even in this aspect we are on par with guidelines and the best practice in Europe. The nurse has her sheet, the doctor has his and our next priority is to get the ambulance team to also start using one. These days there is very little second guessing and much improved confidence levels from all involved.

The Basecamp community platform allowed us to feel like we are much closer to the other stroke units in Portugal as we could see what others are posting and comment on activities taking place. A great example was the recent Portuguese stroke day where hospitals from all over the country took part in various activities to promote better stroke recognition and treatment.

Due to this suggestion, this was the first year that we celebrated the National Stroke Day in Madeira. We were at two primary health centers, Machico and Ribeira Brava, discussing stroke and the role they could have.

The stroke team in Madeira agrees that the biggest asset when it comes to making us feel part of this larger community has been our consultant Claudia. Yes, we had the materials and tools that the project provided, but we feel that our consultant is our primary link to the rest of Europe. She has a perspective that we did not have access to before because she also works in other hospitals too. She sees what others are doing that works and passes the tips and tricks on to us. She also has access to a much broader knowledge base as she has daily interactions with other consultants that are doing the same thing on other European countries. It's quite refreshing sometimes to hear your situation is not as dire as it is for others in Romania for example, or to hear an inspirational story from the Ukraine or Italy. We have found that the core of our new community is not just in a workshop or an online forum, it's also in a person that tells us the stories that inspire us and inspire others by telling them ours.

Enf Arlinda Oliveira, Dr Patrício Freitas and Dr Rafael Freitas

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Slovakia

The aggregation of marginal gains

Breaking down every aspect of Olympic cycling into smaller elements and improving each element with 1% led to Olympic gold for the British cycling team in 2008. Could the same principle be applied in the race for a patient's life?

Some stroke teams in Slovakia were keen to find out. They already had good processes and procedures in place and by mid-2016 had a mean DTN time of just 32 minutes – almost 50 minutes better than the European average and a clear 28 minutes below the guideline recommended hour. So, when the Angels Initiative came along, Prof. Zuzana Gdovinová - head of the cerebrovascular section of the Slovak Neurological Society and Prof. Peter Turčáni, the chief neurology specialist in Slovakia, jumped at the chance to inject some new thinking and extra energy into their effort.

The results so far have been small, but important. In cooperation with Prof. Gdovinová, Dr. Eva Rozprávková, Dr. Ľubica Bajerovská and a group of young, enthusiastic heads of neurological departments in Slovakia - Dr. Michal Kováčik, Dr. Vlastimil Serdahely and Dr. Marek Krivošík - we started by breaking down the process of stroke treatment into its different elements.

The area that seemed to need the most improvement was the pre-hospital phase, so we tweaked the existing pre-notification ambulance card. The new card included more precise questions to better identify crucial information about the patient's medical history, such as the exact medication the stroke patient was already taking, and a description of the environment the ambulance crew found on their arrival. Importantly we also included the hospitals stroke mobile phone number to be used for pre-notification. These marginal refinements to an already successful process have had a measurable effect.

Dr. Kováčik's stroke team at Liptovský Mikuláš hospital started to use the new ambulance card and after two months the results show a reduction of DTN time by almost 20% - that's six minutes saved on an already impressive 32 minute time.

Now that we have tasted success we don't want to stop here. Our next goal is to have the refined ambulance card rolled out across the entire country. Thanks to Dr. Eva Hanáčková, who arranged a meeting with Dr. Matej Polák - head of the Association of Emergency Medical Services in Slovakia, we're one step closer to achieving that goal.

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Poland

What a difference 15 minutes can make

The level of stroke care in Poland has improved greatly in the past years. Under the guidance of people like Prof. Anna Członkowska and others the number of stroke centers grew from just a handful in 2010 to around 170 today.

Poland did not only focus on more, they also focused on better. In most countries around the world that we have analyzed, we found that they were able to increase the nationwide % of all stroke patients that receive recanalization therapy by on average 1% per year. Poland has averaged around 2% per year from 2010 to 2015! Patient care was transformed, with some reference hospitals now averaging DTN times of 45 minutes.

However, after this initial burst of enthusiastic activity, momentum has slowed down somewhat since 2015 and the numbers seemed to have plateaued to a certain extent. We all know that on a diet, the last couple of kilograms towards your goal weight are always the most difficult to lose and perhaps this is the same for stroke care in Poland.

Should these Polish hospitals that are now already on average DTN times of around 45 minutes consolidate or should they push further to break through the 30 minute barrier like the majority of hospitals in their neighboring country Czech Republic for example?

15 minutes may sound insignificant, but according to a publication by Saver et. Al (2013), every 15 minutes saved in the treatment time of a stroke patient represents an absolute 4% reduction in mortality, 4% reduction in symptomatic ICH and a 4% improved chance of independence at discharge. In other words for a patient 15 minutes may mean the difference between riding a bike or sitting in a wheelchair.

The interesting thing is that we have found while visiting many hospitals across Europe is that there is a very big difference in the mindset for every 15 minutes you add to the DTN time in a hospital. It is as if there are three distinct levels of treatment with three distinct mindsets and varying treatment pathways depending on what level the hospital is targeting.

Observing hospitals that average around 30 minutes or less, you quickly see that they think differently, for them time is an absolute priority. They also act differently by doing a combination of the following things.

- They have a pre-notification system in place with their EMS partners.
- They take the patient directly to the radiology department and don't waste time by stopping in the ED.
- They interpret the CT on the spot and also treat the patient in the CT room if the patient is a candidate.
- They only consider certain priority lab tests before making a treatment decision and often make use of point of care tests.

Interestingly, hospitals that are averaging around 45 minutes have a slightly different mindset. It's not that time is not a factor for them as they worked hard to get under 60 minutes, but it's almost like they are content with the level they have achieved and stopped pushing to improve more. In hospitals like these we often hear concrete reasons why some of the steps mentioned above cannot be done in their unit, or how in their opinion 15 minutes does not make such a big difference.

Hospitals that are averaging around 60 minutes or more often have a very different mindset. In some cases just one or two things that cause major delays like waiting for blood results for example, in others it's just a general absence of haste. The interesting thing is that those who are now treating patients in 30 minutes look back and say, what did we do for an hour?

In Poland with the personal engagement of Prof. Anna Członkowska and the official endorsement of the National Consultant for Neurology the question now is where to aim for. With significant healthcare and government figures now endorsing the Angels initiative, we are starting to see the momentum shifting again in the right direction.

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Lazio: Italy
Fixing a broken wheel

Rome was considered by many as the centre of the world. It is no surprise then that the centre of a regional hub and spoke network was also situated in Rome. What may be surprising to find though is that on closer inspection all spokes in our wheel were not as tight as we would wish them to be.

The Lazio region of Italy has a population of almost 6 million, 21% of whom are aged 65 and over. That's above the average percentage of Europe, (18.9%) which has an obvious impact on the number of stroke patients in the area.

There are 4 main hospitals in the region, each one at the centre of a "hub and spoke" model and each catering for specialist patient needs. Arranged around the central hubs are "spoke" hospitals – smaller facilities that refer to the larger central institution for treatments like mechanical thrombectomy, surgery and stroke unit care.

Some critical issues inside the network meant that it wasn't operating as efficiently as possible. Communication was patchy and spoke hospitals were in some cases not "stroke ready". This resulted in acute patients often being accepted at spoke hospitals but not treated, resulting in much longer treatment delays to get to the "hubs" for the standard of care they required.

In one of the four hub hospitals, San Camillo, we realised that to have an efficient stroke network, several key elements are required including: a standardized stroke pathway, well-trained multidisciplinary teams in all hospitals including the spokes, continuous quality monitoring, and collaboration within the network. So, together with the members of our stroke team, we decided to take advantage of the Angels Initiative, which promised to provide targeted support to improve the quality of care.

Lorenza, our determined Angels consultant, organized a multidisciplinary meeting during which we critically reviewed and compared the stroke care pathways in the San Camillo regional hospitals. She helped us identify key issues delaying our stroke patients' treatment and together we created a "Stroke Time Tracker" - a form for the professionals to note key delays in the stroke pathway. This apparently simple action has helped us adopt this quality-monitoring mindset that has been such a crucial part of our improvement process.

Lorenza is now part of our team as a facilitator for our community, not only organizing meetings but

Perhaps the most revealing insight from the intervention was the need to make three of San Camillo's spoke hospitals "stroke ready". Doing so would have a huge impact on the region's stroke care outcomes, so Lorenza started a consultancy process in these hospitals. Since then we have identified corrective actions and instigated a programme of education and training.

also sharing best practice, energizing the network and improving communications. We genuinely believe that sharing ideas and experiences with our wider community will help us achieve even better results in the future.

The good news is that our efforts are paying off and the hub and spokes at the center of the world is getting tighter and tighter with every patient we treat.

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Umbria, Italy
The first Angels Regional Workshop

Dr Ricci and Valeria

Umbria is a small region in the Centre of Italy and thanks to the collaboration and support of the valuable stroke network in the territory, last October we organized the first Angels regional workshop, in the beautiful scenario of Assisi.

That was a very successful and motivating meeting, at which they took part all the regional stakeholders from Emergency department, ambulance, stroke units, radiology and neuroradiology.

Basing on the needs of this regional stroke network, the meeting had three major objectives:

1
Standardization of the stroke pathways among the hospitals of the network

2
Community: strengthen the relationships among the stakeholders

3
Quality monitoring: develop the regional quality monitoring system

The five stroke units in Umbria were already part of the Angels network: they had already followed the whole consultancy process and experienced engaging and efficacious simulations.

"The results obtained by these hospitals were laudable and admirable and so I wanted them to share their experience and the excellent results achieved."

Thus, after an introduction about Angels in Europe and the support from the ESO, held by the president Valeria Caso, the Angels hospitals shared their experiences: Dr Silvia Cenciarelli spoke about the precious support Angels gave to the stroke Unit of Città di Castello, to overcome the bottlenecks in their stroke pathway. The simulations held in the hospitals of Branca and Perugia, presented by Dr Tatiana Mazzoli and by Dr Valeria Caso, showed how this tool helped their teams to deeply analyze the organizational flaws in their pathways and mainly to agree upon several crucial improving actions. All these presentation showed the excellent outcomes the teams achieved working with Angels, which are the result of their commitment and of a fruitful collaboration with Angels.

"It was really impressive hearing from their voice the big impact and the significant legacy they got working with Angels! It was a big satisfaction for me and a huge proof about what Angels is meaning for our hospitals in our countries!"

More hospitals in the region, motivated by these stories, decided to join the international Angels network and to benefit from the Angels support.

Very interesting was also the round table "FROM THE AMBULANCE TO STROKE CLINICIANS", aimed at comparing the stroke pathways in the different hospitals by means of the so called "presentation form": two slides where the stakeholders where asked to share the following key information about their hospitals and their stroke pathways :

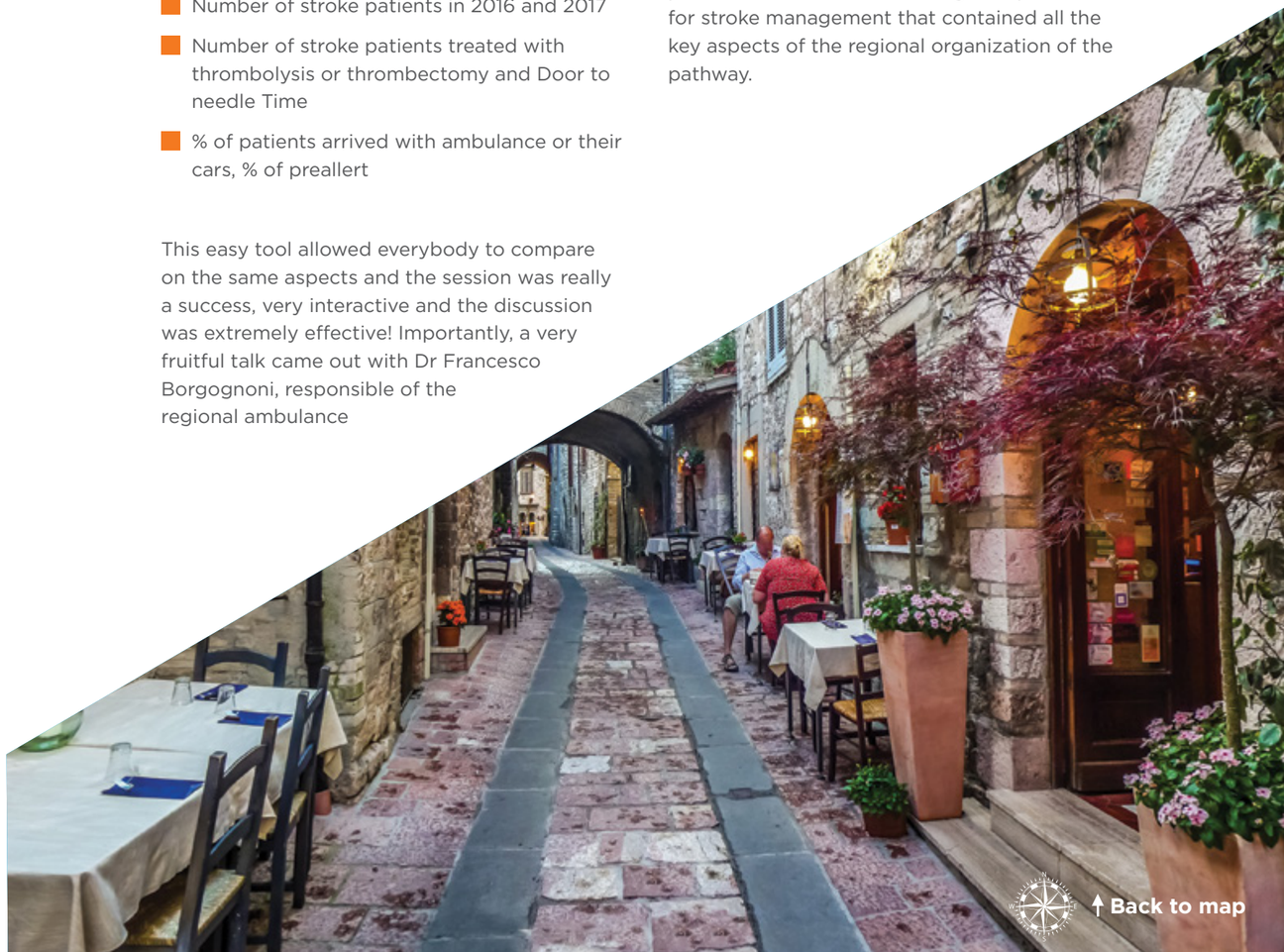
- Number of beds and professionals working in the stroke unit
- Number of stroke patients in 2016 and 2017
- Number of stroke patients treated with thrombolysis or thrombectomy and Door to needle Time
- % of patients arrived with ambulance or their cars, % of preallert

This easy tool allowed everybody to compare on the same aspects and the session was really a success, very interactive and the discussion was extremely effective! Importantly, a very fruitful talk came out with Dr Francesco Borgognoni, responsible of the regional ambulance services about the necessity to standardize the stroke code procedure in the whole region.

A very interesting presentation about the telemedicine as a tool to improve the quality of stroke treatment, held by Dr Francesco Corea, was followed by a deep discussion about the key concept of imaging in stroke and about the topic "From diagnosis to endovascular treatment", held respectively by Dr Floridi and Dr Hamam.

The focus of the discussion moved to quality monitoring: the interactive session with Angels Plus showed the great value of this tool that, together with the other Angels instruments, appeared to be extremely useful and impactful for the stroke quality improvement processes in the region. Importantly after this meeting more hospital joined to the ESO-Angels Awards and we hope to see these doctors on the stage at the next ESOC.

Dr Stefano Ricci concluded with the presentation of the draft of regional protocol for stroke management that contained all the key aspects of the regional organization of the pathway.



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Siena: Tuscany
The spirit lives on

The Angels Spirit of Excellence is embodied by someone who is dedicated to the pursuit of excellence in stroke care for their hospitals and patients. Someone who serves as a mentor for other hospitals or individuals within their greater community. Who takes part in the initiative using the tools and resources made available to them and is committed to doing whatever it takes to give stroke patients a second chance at life.

After being privileged to spend some time in the Karolinska Institute in Stockholm, I returned home to my hospital in Siena, Tuscany. Motivated and inspired by the new perspective that I had gained, I began my journey of change by gathering my colleagues together to share my experiences and to inspire them by what I had experienced in Stockholm. I felt it was my responsibility to lead and encourage my team to implement the changes that I knew would create an efficient stroke care pathway. With the support of Prof Martini and after many experience sharing sessions we managed to align the team. Once the team had aligned, we decided to rewrite the internal hospital stroke pathway. With the help of our hospital's agile project team we identified points of improvement with which to reduce our door-to-treatment times. Prof Martini and I not only wanted to make changes within our own hospital, but wanted to bring about changes within the whole regional referral network to ensure it functioned more efficiently and effectively.

Our initial changes resulted in large reductions in treatment times and even though we were not perfect yet we felt we had achieved a lot.

I guess as it is with most big endeavors, people start with huge amounts of enthusiasm and excitement but without support this begins to wear off and one begins to feel tired and demotivated. Because the project wasn't the main focus any longer, we lost momentum and started losing some of the gains that we had initially made in the door to treatment times.

Prof Martini and I almost felt like we were fighting the good fight alone, and even I was slowly getting a bit demotivated. It gets quite exhausting always needing to encourage others to keep implementing all of the changes.

It was at this time that I was introduced to The Angels Initiative by local Angel, Lorenza Spagnuolo. We quickly realised that the support offered by Angels was the boost that we needed. Lorenza made our team feel important, almost like we were the "Angels" within our region. All of a sudden it felt like we were a part of a movement, something bigger than ourselves.

Since joining the Angels Initiative we have again updated our treatment processes and further improved our treatment times. We have had 3 editions of full day regional multidisciplinary workshops, attended by more than 150 professionals including EMS staff, nurses and doctors from Siena and our referring hospitals. The workshops even included virtual patient simulation training using the body interact software. Some of the cases were pretty tricky but I was really proud of how engaged and professionally everyone took part. Furthermore we are now in the process of setting up a dummy patient simulation within our hospital to test and reinforce our hyper acute pathway and see if we can find ways to further optimise our treatment times. Finally, through Lorenza, we are currently in the process of co-ordinating the installation of the e-aspects software for all surrounding hospitals to improve the quality of referrals within the region.

Lorenza has reminded us of how significant our daily work is and how impactful we have been. We now live by the Angels slogan:

GIVING *life* A CHANCE.

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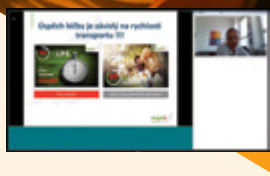
Webinars
and a feedback loop

Revolutionising the Czech Republic EMS – Hospital Network

Giving at least one patient a better chance to live



On a calm Tuesday night, "Patient A" felt tired and decided to go to bed at a reasonable hour to get some rest. He was a healthy 49 year old and nothing felt unusual or out of the ordinary for him on this particular evening. At 1:50 AM, he woke up and tried to stand up from his bed but immediately fell to the ground. Fortunately his mother who resided with him heard a loud thump on the ground. She rushed to his room to find him struggling to stand up from the floor. She immediately called the emergency services and requested for an ambulance to help them.

We (the ambulance crew) arrived at "Patient A's" apartment at 2:11 AM and discovered him lying behind the furniture in the living room. A few weeks back, the standard procedure to follow would have been to remove the patient from his apartment, stabilise him and to then transfer the patient to the nearest hospital. After attending educational webinars recently, we were able to recognise that the patient was showing signs of a stroke and therefore the standard procedure would not be sufficient to save the patient's life.

Enthused and excited to put our newly learnt knowledge into action, we knew it was up to us to take on the challenge and act fast, as this patients brain was busy dying. We immediately began to conduct the basic symptomatology tests of FAST PLUS (stroke card); which we had been taught to use. The stroke card helped us to confirm the symptoms of a stroke, gather some key pieces of information that the treating team would need and guided us in determining where to take the patient based on the severity of the stroke. After conducting the tests, we determined which the most appropriate hospital was that could care for this type of stroke and called into the Comprehensive Centre to confirm the intake of a stroke patient.

At 2:39 AM in the morning, the ambulance arrived at the emergency department of the hospital with the strokologist on duty from the Faculty hospital in Ostrava, ready and waiting to attend to the patient. At 2:40 AM the stroke team transferred the patient directly to the CT room and begun the process of treating the stroke patient.

Without the webinar training sessions, we probably wouldn't have been able to make small changes in our procedure, potentially resulting in a huge impact on the patient's outcome. We realised and understood that so many things could potentially have been done incorrectly. We could have missed the signs of stroke, we could have taken the patient to the wrong hospital potentially leading to him not being treated at all or we could have arrived at the correct hospital without notifying them that we are on the way causing tremendous delays in the patient's treatment, but this time it didn't.

The educational webinars that we attended were part of a series of webinars put together by Dr. Bar, Dr. Václavík, Dr. Holeš and MSc. Jaššo in collaboration with the Angels Initiative. The programme, known as the Ostrava Model, initially struggled to get off the ground but with the combined efforts of Czech Republic Angels consultant, Jarmila Lakoma and the experts, the webinars were successfully launched in February 2017. It has since received incredible feedback from both physicians, who were connected to the main stream Czech Republic stroke network as well as from the emergency services teams, who have found great value in the programme. The webinars allow emergency services teams the opportunity to conduct interactive discussions with neurologists, ask questions and gain clarity on things that they are unsure of as well as to discuss real cases and challenges that they are met with in the field.

Through these educational webinar sessions, we are able to empower the emergency services teams and demonstrate to them the integral part that they play in process of treating a stroke patient. By doing this, we give them the motivation and encouragement to go into the field and make a difference.

We have also implemented a feedback loop where directors from the EMS services and the hospitals have a dedicated email address that they are able to report good and bad cases that they have dealt with. Through this channel, reports are received giving updates such as where the agreed protocols were followed, such as the case of Patient A or when a hospital in the network declines to receive stroke patients for some reason. This provides valuable in field feedback and is used to improve the network.

The webinar training together with the open and honest feedback is revolutionising our pre- and in hospital stroke network. This is my motivation every day – to go out there and make a difference. I truly believe we gave the gentleman a better chance to live.

Mr. Jaššo, who was one of the team members that assisted Patient A.

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Romania

A star is rising behind the Carpathian mountains

According to the burden of Stroke report, in 2015 only 1% of Romanian stroke patients had access to treatment in Stroke units.

10 stroke centres in Romania

In the absence of robust epidemeological data it is estimated that Romania would need to establish around 100 stroke ready hospitals in order to provide all Romanian Stroke patients the opportunity to receive the care that they deserve.

What we have found in many developing countries is that typically there are well established reasons for the situation being what it is however we have also seen that achieving such drastic growth goals is possible when the right people are enthused and dedicated to the cause. For example, in 2010 Thailand had established two stroke units, one in Bangkok and one in Phuket. Following a systematic process of adding 15-20 stroke ready hospitals per year, Thailand was able to establish more than 100 stroke ready hospitals and provide adequete geographical coverage for the whole country. In our previous edition, we referred to Poland who was able to grow the number of stroke centres from only a handful in 2010 to 170 stroke centres today.

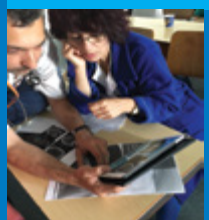
Growing fom 1% may sound like a daunting task but this is a challenge that a group of professionals in Romania have fiercely taken on. The Romanian stroke community pulled together by Dr Cristina Tiu, has managed to put together a small but strong community with a unified approach and end goal – they want to change the face of stroke care in the country.

The community started off with 4 Stroke ready hospitals, servicing their patients in surrounding areas. However they knew that settling for only having 4 stroke ready hospitals could never be enough. Their goal to increase the number of Stroke ready hospitals needed to be tackled fiercely and precisely. Since setting their goals, they have made no excuses and have put in endless amounts of effort to grow the stroke community within Romania. Dr Tiu has groomed, pruned and cared for a unified stroke community, encouraging everyone to work together to improve the quality of stroke care within Romania. As a community they have remained focused, dedicated and have not deviated from or given up on what they want to acheive.

By the beginning of this year, Romania has managed to double the number of stroke centres in the country to a total number of 10. This has not been an easy result to acheive as there have been challenges along the way however with the introduction of the Angels Initiative and the assistance of the local Angel, Ligia Bălănean, the momentum and motivation is at an all time high. An additional 8 hospitals have already been identified and are working hard with Dr Tiu's team to be recognised as stroke ready. Many hospitals have also started capturing their stroke treatment data in the ResQ registry and in May at the ESOC congress the Clinical Hospital of Emergency Oradea was one of the first hospitals to be awaded the coveted ESO Angels Gold Award for the quality of their treatment based on their ResQ data. The team held a Stroke nurse training course attended by nurses from all over the country and are busy doing dummy patient simulations to optimise their own treatment pathways.

With their current growth curve, the level of stroke care in Romania is sure to have a different face in the years to come.

On behalf of every patient that will receive optimal stroke care in Romania, we would like to thank the Romanian stroke community for working against all odds to give them a second chance at life.



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Bulgaria

From 8 to 21 stroke ready hospitals in only 12 months

It's easy to believe that growth comes naturally, something that will happen regardless of whether we try or not. The truth is that it often takes several attempts and lots of hard work and dedication that often goes unnoticed and unrewarded and then all of a sudden unexpectedly something happens that creates a spark and growth starts coming.

It's now been more than two decades since the NINDS study revolutionised stroke treatment. Stroke became an emergency as for the first time there was something that could be done to remove the clot and save the patient's brain from dying. Yet as recently as 2016 of all the roughly 51,000 stroke patients who sought help in Bulgarian hospitals, only 329 received recanalisation therapy. This was despite years of effort and hard work by the Bulgarian stroke community.

A team of Bulgarian experts under the leadership of Academician Ivan Milanov, chairman of the Bulgarian Society of Neurology, were eager to fix the situation though. After reviewing the number of stroke patients vs the number of stroke units within Bulgaria, they knew that they had to establish more stroke ready hospitals within the country. In 2016 Bulgaria had only 8 stroke centres in the country and if they wanted to improve the treatment of stroke they would need closer to 40 and they had to ensure a good geographical coverage of the new units. 20 years of experience told them that this was not so easy to achieve so they were open for any assistance they could get. It was probably for this reason that in June 2016 a delegation led by Academic Milanov attended the Angels Initiative European kickoff meeting in Mainz, Germany. Was this the unexpected spark they needed?

It's a bit hard to say what exactly made the difference and precisely which aspect of the Angels Initiative created the spark but since then, the Bulgarian stroke community has gone from strength to strength and have expressed that they have no intentions of stopping where they are at.

They have successfully established 13 new stroke ready hospitals in the country, having only had 8 in June of 2016 they now have 21 spread all over the country. Despite the growth in the number of hospitals being phenomenal and the aim being focused on further increasing this number, the Bulgarian stroke community knew that they could not only focus on increasing the number of hospitals within the country. They needed to direct focus into ensuring that the new hospitals were functioning optimally and were seen as "better" hospitals. They felt it was important to ensure that the new hospitals were groomed, pruned and mentored correctly. For this they have been very active doing training workshops, dummy patient simulations and implementing standardised checklists and stroke bags in all hospitals treating stroke patients.

After all this time it almost seems difficult to believe it was so difficult in the past, but perhaps that's the value of community, of being part of something larger than oneself. Something that can create a spark in the right people, people that can make such unbelievable growth all of a sudden seem easy.

Academic
Ivan Milanov
Chairman of the Bulgarian Society of Neurology

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Portugal
“We’ve got contaminated!”

Ana Araújo Gomes

The Stroke Unit of the Tondela-Viseu Hospital Center, in operation since 31 March 2008, currently has 8 beds - 4 acute beds and 4 subacute beds and serves a population of 300,000 inhabitants.

It is an aging population where the impact of stroke is the most significant. From the outset, clinical protocols have been outlined in accordance with current international recommendations, in order to standardize procedures, and an in-hospital Code Stroke has been designed to ensure rapid access to treatment.

We were, however, in anguish, that we still had a time slot that fell short of the goals recommended by ESO.

We realized that a structural change in the pathway was needed to achieve better results.

Following this realization, in 2015, a new flow chart was prepared and implemented in the Emergency Department. This flow chart was used to screen patients with suspected strokes, allowing a reduction in time and immediate access to the emergency room. Since implementing the flow chart, and having always had in mind the objective of achieving better results, some additions were made to the flowchart and consequently, our door-to-therapy times began to improve. We furthermore established a network with the University Hospital Center of Coimbra, which through Telemedicine assisted with a better referral system of patients that qualified for endovascular treatment.

About a year ago, we began to start thrombolysis iv systematically in the emergency room rather that in the U-AVC. In April 2017, we put together a Code Stroke medical team which ensured patient control from the beginning of the pathway. The dedicated code stroke medical team allowed us to reach an average door-to-therapy time of 55 min.

But there was more to do ...

It was with great anticipation that in June this year, we joined the Angels initiative. We started our partnership by exploring the tools available on the Angels website and soon we were convinced that we were facing a window of opportunity! In July we had a visit from our local Angels Consultant, Claudia. She wasted no time with proposing that we conduct a code stroke simulation. It was extremely interesting as this allowed us to review procedures and assess where we had unnecessary time delays. At the end of the simulation the team were challenge by Claudia to reach a time of <45 minutes in > 95% of patients. Challenge accepted but to do this, we needed to make a few changed. We started with administering the rtPA in the CT room, which drastically improved our times. As of 1 August, we began to record and keep track of important details to help us monitor the Code Stroke prospectively and to review our daily performance. These recordings include the decision-making time, door-to-therapy time, reasons for a patient not being treated and the reasons for any delays in the pathway. These details are all easily marked off in our unit on an A3 sheet, which was provided by Claudia.

After two months of recordings, we were impressed to see our results. We had exceeded the goals and objectives that we had set ourselves and we had assumed an average door-to-needle time of 32 min and a record time of 12 min in the 24 fibrinolysis performed.

These results proved to us that these targets are possible, especially when there is pre notification by the emergency services teams.

The team is more motivated, more competitive, more ambitious, more united. This contributes to an improvement in the quality of stroke care.

We are very grateful to Angels and, particularly to Claudia, for having “contaminated” us with her enthusiasm and integrated us into this community.

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Portugal
“Thank you for the good work!”

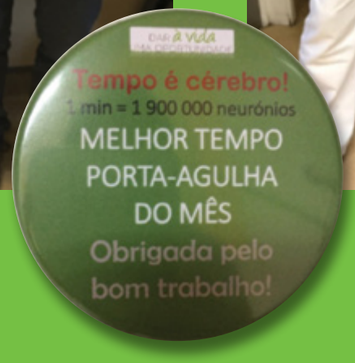
Catarina Souto e Ricardo Braga

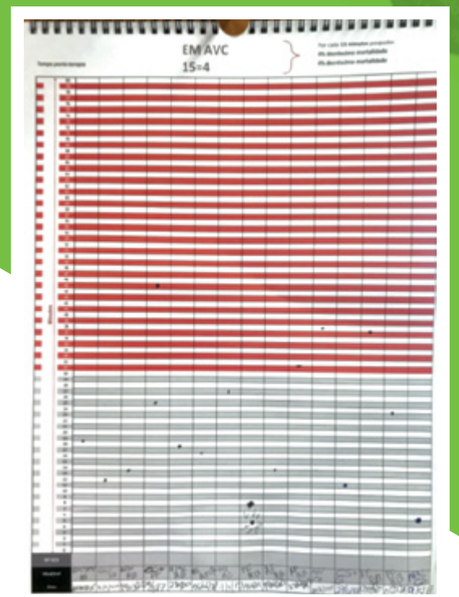
The Code Stroke aims to increase reperfusion in the acute phase, with a reduction in the time between onset of symptoms and treatment a priority objective (High Commission for Health, 2007).

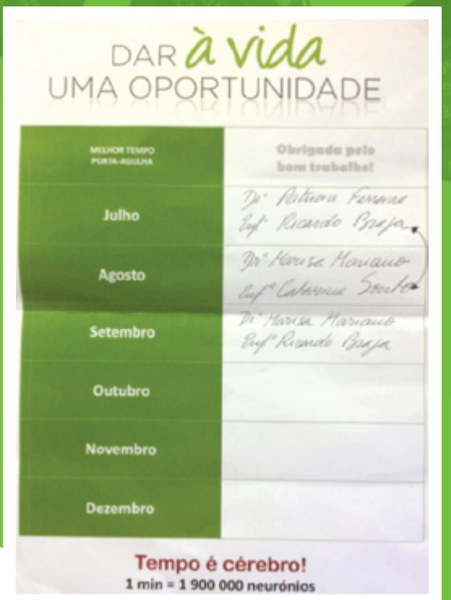
Aware of this reality, the Cerebral Vascular Unit (UCV) of Hospital de São José has implemented over the years strategies that aim to reduce the door-to-needle time.

In order to reinforce the motivation of the UCV team to obtain reduced times, in association with the Angel’s Initiative (Dra. Cláudia Queiroga), badges were created that are assigned monthly to the doctor and nurse with the best time of the needle of the month.

The time of all patients undergoing thrombolysis in our hospital is recorded in a document created for this purpose, which is attached in the place where the multidisciplinary meeting is held daily. At the end of each month the names of the team with the shortest time slot are transcribed for the posters presented below.







At the beginning of each month the coordinator of the UCV thanks the team that received the badges previously and gives them to the team that got the best time in the month that has passed, reinforcing the effort of all the elements. From our experience two more badges were created, this time to reward the interventional neuroradiologist and the nurse of the angiography room with the best puncture-recanalization time of the month, which will be attributed as of next month.

With this initiative we have seen that there has been an increase in the motivation of the team, shorter door-to-needle times and that a healthy competition has been created, with a constant challenge that will undoubtedly benefit the patients we care for.

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Hungary

Better answers start by asking better questions

The provision of acute stroke care in Hungary has grown rapidly and steadily over the past seven years. In 2009 the country had just 16 certified centres, a number that had grown to 39 by 2016.

However, although the increase of stroke care is great news for a country that has a high incidence of acute cases, there was little if any recording or analysis of treatment data. As an example, the estimate of new annual cases varied wildly from between 26,000 to around 45,000. This disparity is emblematic of the lack of actionable data, rendering the accurate planning of future resource and refinement of current practices virtually impossible. Of course, implementing more robust systems takes time and manpower – two things the Hungarian health service didn't have in abundance.

Enter into the scene two helping hands - The Angels Initiative and the ResQ Registry. With the new alliance in place a simple plan was devised to pilot a low-impact method of data collection that wouldn't put any extra strain on already busy health professionals. Under the supervision and endorsement of Professor Bereczki, we instigated a one-month pilot RES-Q Registry project at Semmelweis University Neurology Clinic in November 2016. The results highlighted a range of issues and areas for improvement and when a second month of data collection was undertaken in January 2017, many of the previous errors and gaps in care had been corrected.

The results provided such a robust case for the collation of a comprehensive dataset that Professor Bereczki shared the findings with the heads of other stroke units throughout Hungary.

After discussion with the President of the Hungarian Stroke Society, all Hungarian stroke centres will now have to answer simple measurement questions as a mandatory requirement from the start of April 2017. We believe this is the beginning of a more future-focused approach, one that will give Hungarian stroke professionals an evidence-based approach to highlighting areas for improvement and investment.

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Training
for their lives

Professional sports teams are obviously at the top of their games, but strangely they still train for 5 days to play one game on the weekend. Gary Player (World Famous Golfer) once said the more he practices the luckier he gets. Can we learn from this and train more so that we are at our best when a patient needs us the most? I recently had the privilege of attending a training session of my favourite sport hosted by the national coach and what I realised is that they don't only train more, they also train differently. They spend hours on breaking down a movement or an activity into its basic elements and then find creative ways to train each element as a building block before bringing it all together as the final move.

This made me think about how we approach training within the Angels Initiative. Since then we have set ourselves the objective of never again doing any training session that is PowerPoint® based only. We have to train more, but we also have to be more specific and creative in breaking down complex topics into its building blocks and then simulate doing them until they become second nature.

As a result, in our educational workshops we aim to achieve the following:

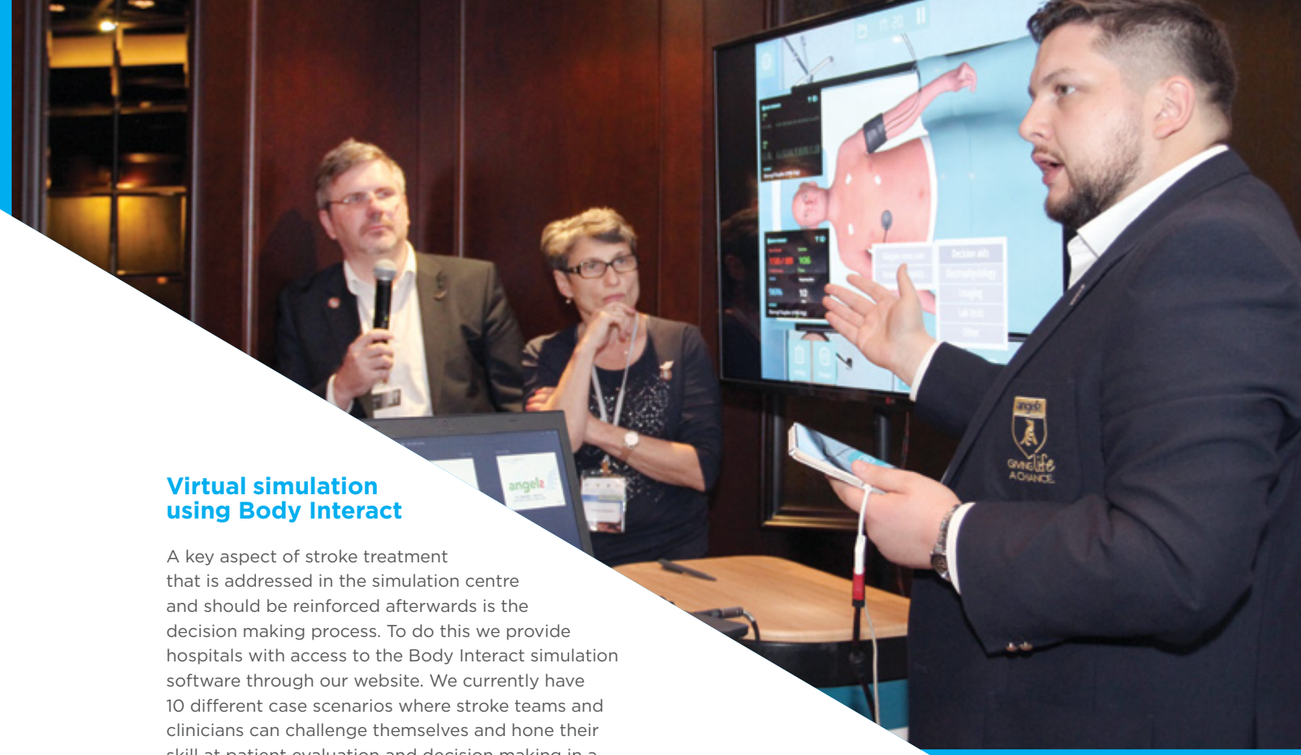
- **Break down and explain the detail behind complex concepts but make the ultimate message simple, understandable and with memorable elements.**
- **Give the audience something in their hands that they can refer to that contains these elements above for future reference.**
- **Practice implementing these elements in a practical session.**
- **Reflect and debate challenges and misunderstandings that may originally arise from the first practical implementation of the elements.**
- **Repeat the practical implementation to cement the learning.**

As practical examples of how this is done we will look at how we approach workshops to optimise the hyper acute pathway as well as the decision making process at the end of that pathway.

Simulations centre simulations

In recent workshops we realised that especially for hospitals that have just started a stroke service, just focussing on reducing treatment delays are not helpful. These hospitals often require much more in-depth training on performing the initial assessment of patients, on interpreting the CT image and on what to keep in mind in the decision making process.

Together with Dr Robert Mikulik and Dr Paula Santalucia we are currently working on a standardised simulation curriculum that can be used in simulation centres across Europe. We will use these type of simulation trainings to help hospitals that have just started a stroke service or stroke teams that want to improve the assessment and management of their patients using a simplified decision making process. It's very rewarding to see how drastically attendees improve their confidence and skill from the first simulation on a simulation course to the 4th or the 5th simulation on that day.



Virtual simulation using Body Interact

A key aspect of stroke treatment that is addressed in the simulation centre and should be reinforced afterwards is the decision making process. To do this we provide hospitals with access to the Body Interact simulation software through our website. We currently have 10 different case scenarios where stroke teams and clinicians can challenge themselves and hone their skill at patient evaluation and decision making in a safe virtual environment. Hospitals that have used this simulation software have found it very engaging and quite challenging at times but brilliant at building confidence in treating stroke.

CT Image interpretation training

In a recent panel discussion about decision making in stroke one of the experts commented that 10 years ago it was considered an art form to try and see all the different ischaemic signs on a CT Image. These days all they look for is to exclude signs of bleeding or other complications like tumours for example and to exclude severe damage indicated by more than a third of the MCA region being affected. Only looking for bleeding and severe stroke progression is certainly a way to break down a complex concept but what is still needed is to provide stroke teams with tools to practice this method in a safe environment to build confidence. To do this we are currently working with experts to provide access to a library of CT images on our website that can be used to improve image interpretation and compare treatment choices with that of other experts.

Dummy patient simulations

Stroke treatment optimisation is not just about managing patients and making better treatment choices it's also about improving the speed at which patients are treated. For this we have seen that it is perhaps best to do a simulation in the stroke teams own environment.

A dummy patient is chosen and the team proceeds by treating the patient as they would normally for any stroke patient in real life. The treatment delays are recorded using a stopwatch and the whole process is recorded using a GoPro camera. John Dewey once said that experience plus reflection equals learning so in a feedback session the team reviews the GoPro footage and compares this to best practice examples with the aim of identifying improvement points. With suggested changes agreed the team then do a second simulation, this time implementing the changes that they agreed to try implement in the future.

Doing this type of simulation we have almost without exception been able to reduce the door-to-therapy times by around 50%.

Using the training formula of simplification, training, simulation, reflection and a second simulation has seen massive improvements in the implementation of better stroke care quality in the hospitals we are working in.

By combining different types of simulation or rather experiential learning methods we can make sure that the training sticks, that confidence increases and that patients are treated with the right therapies in the right time.

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SEDENE

The Spanish Society of Neurological Nursing better known by the acronym S.E.D.E.N.E, is a young association of nursing professionals whose goal and purpose is the development in care for neurological patients, the patients' family and the community in general.

SEDENE is the result of the restlessness from seven nursing professionals, who felt they could contribute more to the community than what they were at the time. The adventure began on 10 December 1993 when the seven nurses coming from different points in Spain, decided to meet and agreed to start the nursing society known as SEDENE. They decided that anyone joining the society needed to share the same values and drive that they did, which was to embark on an adventure that was full of motivation and various beneficial projects for all involved. Since then they have registered over 300 nursing professionals and have empowered, educated and motivated each other all across Spain.

To our knowledge SEDENE is the only nursing society of its kind in Europe and brings great value to not only those that are involved in the society but also to the surrounding community and the patients that each of them treat. Since starting the society, SEDENE have organised and hosted educational workshops, congresses and events.

They have put together a rewards programme for members that execute valuable scientific work.

They have also launched various publications as well as collaborated with various Continuing Education courses in various Hospitals, conferences and other scientific and social activities related to the different areas covered by neurology. The varied and in depth approach is to ensure that they are covering all bases and are continually educating and up keeping their members knowledge and involvement within their profession. SEDENE has created for nurses who care for neurological patients, the opportunity to meet with colleagues that have mutual outlooks to the industry and to share their knowledge and professional experiences with one another.

SEDENE approached the Angels Initiative at the National Neurology congress in November 2016 to discuss partnering with them. Through evaluating the needs of the community, an exchange programme was developed based on a previous existing SEDENE project. The new project involves stroke nurses enrolling for an exchange programme, which creates the opportunity for them to visit their colleagues in field. Through this type of learning and experience sharing, they feel that all nurses involved could gain firsthand experience and knowledge that no workshop or textbook could ever teach them. The society believed that a new project could use additional support and an extra boost to ensure its success, which the Angels Initiative has to offer.

Together, the Angels Initiative and SEDENE are in the final development stage of the project plan for the nurses programme, which will offer far more than just an ordinary exchange programme. Through this, the relationship between SEDENE and the Angels Initiative has grown from strength to strength and there are already several exciting projects that we are working on together.

SEDENE's passion to do more, be more and achieve more resonates through their work and is something to be recognised with.

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