SANS

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Our SANS newsletter is meant to keep everyone in our Neurosurgery family up to date on latest news from around the SANS world and beyond. We send it out to all active members and post it on to our website. We ask that you share this letter and keep our entire SANS family informed. Please send your contribution to our copy editor Atika at: SANS.newsletter@sans.org.sa

EDITORIAL

Welcome to May!

Summer is finally here, bringing with it a sense of carefree joy. It's time to slow down and embrace the season's spirit.

This May issue is dedicated to review what happened in our last annual meeting. From professional development to neurosurgical advancements, we delve into the ideas that shaped our meeting.

Inside, you will find:

- Thought-provoking articles on the Prof.

 Jamjoom
- **Review** the last SANS annual meeting.
- Beautiful artwork that capture the essence of neurosurgery and the spirit of this field.

We invite you to join us on this journey. Let's embrace the opportunities that summer presents. Whether you are planning a vacation, or simply enjoying summer days at home, we hope this summer cultivate the seeds of growth within your self and our community.

Let's dive into summer together!

NEUROSURGERY IN SAUDI ARABIA

THE ANNUAL PROF. ZAIN ALABEDEEN JAMJOOM LECTURE: A Bibliometric

Review and Personal Observations

By Prof. Abdulhakim B Jamjoom King Abdulaziz Medical City Jeddah, Saudi Arabia

The second Prof. Zain Alabedeen Jamjoom Lecture was delivered on February 11, 2024 during the SANS 2024 Annual Meeting in Jazan. Professor Amro Alhabeeb gave a wonderful, warm introduction highlighting the illustrious career of Professor Zain Alabedden Jamjoom and his outstanding contribution to neurosurgery in Saudi Arabia. He also introduced the lecture's guest speaker, Professor Abdulhakim Jamjoom, who delivered a 25-minute lecture titled "Neurosurgery

in Saudi Arabia: A Bibliometric Review and Personal Observations."

• The neurosurgeons

Based on data from 2016, the global neurosurgeon density ranged from 0 to 59 (median 3.6) per million population. In the same study, a neurosurgeon density of 4 per million population was given for Saudi Arabia (75 neurosurgeons and 18.8 million population). In 2022, the neurosurgeon density in Saudi Arabia was estimated at 7.5 per

This lecture focused on the study of the specialty in the country from the perspective of:

- The neurosurgeons,
- The neurosurgical departments

- The productivity of neurosurgeons
- Neurosurgical training
- The neurosurgical journal
- The annual SANS annual meetings

million population (238 neurosurgeons and 32.8 million population). This discrepancy within a relatively short period of time illustrates that the data is inaccurate and that the number of neurosurgeons in Saudi Arabia is changing rapidly. The calculated neurosurgeon density in 2022 showed significant regional variation in Saudi Arabia, with the highest density in the central region (10.2 per million population) and the lowest in the northern region (3.1 per million population).

In 1990, there were 40 neurosurgeons in Saudi Arabia, 10 of whom were Saudis. In 2022, there were 238 neurosurgeons, 45 of whom were Saudis. The country continues to rely on neurosurgeons from abroad, and this dependence is more pronounced in some regions than others, with the proportion of non-Saudi consultants reaching 75% in some regions.

The Saudi Board in Neurosurgery (SBNS) training programme was launched in 1995. However, in 2022, only 17% of consultant neurosurgeons in the country were SBNS certified. This could be due to the fact that SBNS training capacity was limited in the early years due to the limited number of hospitals approved for training. More importantly, however, was the constant access to training opportunities abroad through the

various government scholarship programmes. In addition, many institutions prefer their faculty to have international qualifications.

One of the unique aspects of the healthcare structure in Saudi Arabia is the multiplicity of funding healthcare sectors. This can affect the geographical distribution of the neurosurgical units. Two-thirds of neurosurgeons are employed by the Ministry of Health and private hospitals. It is fair to say that some sectors are underrepresented in SANS, and it is our duty to include our silent partners and adequately represent all sectors in our organisation and activities.

• The neurosurgical Units

In 2022, it was calculated that there will be a total of 85 neurosurgical units in Saudi Arabia (60% in government hospitals and 40% in private ones). A unit is defined as a hospital with one full-time neurosurgeon. The number of consultants per unit ranged from 1 to 16 (mean 2 to 3).

Obviously, there are many small neurosurgical units in Saudi Arabia, especially compared to the UK, a country with a population of 67 million, where there are 25 neurosurgical units. Our units differ not only in size, but also in their equipment and expertise,

so there are significant referrals between units, which in turn leads to issues with eligibility and delays. Most small units could be better served by a competent general neurosurgeon who takes care of the standard work and limits referrals to the sub-specialised and complicated cases. The general neurosurgery fellowship needs to be considered when planning future local fellowships.

The academic productivity of neurosurgeons

This was investigated by several studies that included the following:

- 3.1 the h-index of Saudi neurosurgeons was assessed for 238 neurosurgeons in 2022 and ranged from 0 to 27 (median 2.8). 47% of neurosurgeons had no recordable hindex. Saudi neurosurgeons' productivity was influenced by the academic status of the neurosurgery unit, training abroad, and length of practise.
- **3.2** The level of evidence of Saudi neurosurgical publications was assessed for 377 articles in 2014. 90% of the publications had an evidence level of 4, with 48% being case reports and 38% being case series. The results have probably improved in recent years.

- 3.3. The 50 most cited Saudi neurosurgical publications in 2021 were identified. Their median results were citation count: 58, journal IF: 1.72 and age: 20 years. 45% of them were case series, 80% were from neurosurgical units in Riyadh and 60% were from two institutions, namely King Saud University (KSU) and King Faisal Specialist Hospital and Research Centre (KFSHRC). The most cited Saudi Arabian neurosurgical paper in 2021 was the RCT by Elwatidy et al, which investigated the efficacy of a high dose of tranexamic acid to reduce blood loss in spinal surgery. The third most cited paper was the case report by Prof Zain, which was widely cited because it was one of the early publications to describe the role of MRI in acute spontaneous spinal epidural haematoma.
- **3.4.** In 2023, the total contribution of Saudi neurosurgeons to the neurospine surgical literature was published. The study compared the Saudi publications of neurospine surgical literature in the last decade (2011-202) with the previous two decades (1991-2010). It was found that there were more publications overall in the last 10 years compared to the previous 20 years (200 versus 152). The mean publication rate increased from 7.6 to 20 articles per year. The studies were larger (mean study population 74 vs. 23) and a lower

proportion of publications were case reports (41% vs. 79%). In addition, more publications were published by multiple authors, multiple centres and multiple countries in the last decade compared to the previous two decades. Saudi first authorship and total authorship decreased (from 100% to 71% and from 93% to 61%, respectively), which can be attributed to Saudi residents and fellows publishing with their colleagues during their training abroad. The dominance of Riyadh has also decreased, as its share of total publications has fallen from 74 % to 45 %.

3.5. Saudi Arabia's global ranking in clinical neuroscience and not in neurosurgery, as the SCImago Journal & Country Rank (SJR) website used does not provide independent data for neurosurgery. Saudi Arabia's productivity in clinical neuroscience has increased year on year from 1996 to 2019. However, the global ranking remained around 38 (total papers) and 40 (total citations). The country's rank based on citations per document was surprisingly low at 139. This is attributed to the fact that Saudi researchers often publish in journals with low IF. The country's global ranking in clinical neuroscience was correlated with five country-specific characteristics. It was found that based on four characteristics (population, GDP per capita, number of neuroscience journals on the SJR website and number of universities among the top 500 in the world), Saudi Arabia ranked 22nd to 26th among the top 50 in clinical neuroscience. It was concluded that the global rankings of 38 to 40 based on total documents and total citations in clinical neuroscience are considered low and could be improved.

• The Neurosurgical Training

In 2021, the outcome of 115 trainees who had started the SBNS training programme between 2001 and 2014 was reviewed. The programme spanned 6 years, so the last patch would have completed the training in 2020. The study found an attrition rate of 29% (half went to other specialities and half to neurosurgery). Of the 82 trainees who completed the training, 74% ultimately passed the final examination, 60% on their first attempt and 18% passed another qualification. It was found that the success rate was significantly influenced by trainees spending longer periods of training in high volume neurosurgical units.

The SBNS was a joint programme and candidates rotated between several hospitals within the same region. In recent years, more and more units have been given the privilege of being sole training centres. This needs to be monitored to ensure that all trainees have an equal opportunity to receive a good training.

The study analysed the fellowship opportunities for the 82 trainees who completed their SBNS training between 2007 and 2020. It was found that 37% did not do any fellowships, 60% completed a 2-year fellowship, 75% completed the fellowship in one speciality and 90% in one country. The 52 candidates who completed a fellowship completed a total of 95 fellowship years. The most popular subspecialties were spine (34%), paediatrics (25%) and skull base (18%). The popularity of these subspecialties could be related to their availability in Saudi Arabia or the ease with which they are accepted abroad. Neurooncology was underrepresented at 2%. Most fellowships (62%) were completed in Canada and Saudi Arabia (24%). It would of course be desirable if more fellowships were available in Saudi Arabia. However, there should be a balance between easy access to local fellowship training and the opportunity for most of our trainees to complete at least 2 years of training at an advanced centre abroad. This will

give them a great experience in neurosurgery and beyond. Canada is the tried and tested training location with links to Saudi Arabia that go back almost 40 years. However, training in Canada is expensive and not all of our trainees can be accommodated there. Only 2% of our SBNS graduates have completed their fellowship in the UK, which is surprising. The UK is a great place to train and we have recently had positive interest from St George's Hospital London and Southmead Hospital Bristol in training one Saudi fellow per year. I believe this is something that should be pursued.

• The Neurosurgical Journal

For us it is the Neurosciences (Riyadh). In 2021, we analysed the citation patterns of 231 original research articles published in Neurosciences between 2011 and 2019. The mean article citations was modest (11.6). The number of citations was found to correlate significantly with the age of the article, sample size, study design and level of evidence. It was also found that the number of articles published by neurospine surgeons during the 9-year period was only 34 (15%).

These were predominantly retrospective case series (56%), level 4 evidence (74%) and clinical (82%). The two countries with the most publications were Saudi Arabia (38%) and China (38%).



A look at the publications in neuroscience raised the inevitable question: Are we ready for the Saudi Journal of Neurosurgery?

This was a summary of the arguments in

This was a summary of the arguments in favour and against.

The argument in favour was:

- The number of Saudi neurosurgeons and their publications is increasing.
- Many Saudi neurosurgeons publish in journals with a low impact factor.
- Many Saudi neurosurgeons consider Neurosciences has a high rejection rate for their papers.

- The Saudi journal will be approved by universities for faculty promotion regardless of its indexing status.
- The Saudi Neurosurgery journal is likely to receive significant participation from international neurosurgeons.
- The success of the SANS newsletter and the significant increase in academic activities organised by SANS are encouraging.

The argument against is:

- Saudi researchers are likely to continue submitting their quality work to well-established international journals with high IF.
- Only 11% of neurosurgeons in KSA are affiliated with universities.
- The total number of papers published by neurosurgeons in neuroscience was modest.

- The experience with the Pan Arab Journal of Neurosurgery is not encouraging.
- The journal Neurosciences was founded in 1996, but still has a relatively modest IF.
- None of the countries that ranked up to 20 ranks above KSA in the SJR had a dedicated neurosurgical journal.
- The financial and logistical burden



IF WE THINK WITH OUR MINDS, WE ARE NOT READY, BUT IF WE THINK WITH OUR HEARTS AND EMBRACE THE MANTRA "IF YOU BUILD IT, THEY WILL COME", WE ARE READY!

SANS2024

18Th SANS Annual Meeting

A REVIEW OF THE 2024 SANS ANNUAL MEETING

The theme of this year's meeting is "Promoting Neurosurgery: Taking the Leap". SANS to take the leap, push the boundaries and have a lasting impact on our patients in all cities across the Kingdom.

From 09 to 11 February 2023, neurosurgeons, neurosurgery residents, medical students, clinical specialists, healthcare professionals and other healthcare professionals met in Jazan, Saudi Arabia for the SANS Annual Meeting 2024.

This meeting brings together the experimental neurosurgery community to share the latest research findings and promote professional development through education and training.

18th SANS Annual Meeting







Promoting Neurosurgery: Taking the Leap

Dr. Yahya H. Khormi President | 18th Annual SANS Meeting (SANS 2024)



09-11 February 2024

The 18th Annual Conference of the Saudi Association of Neurological Surgery with the theme of "Promoting Neurosurgery: Taking the Leap" to embrace neurosurgery at its current pivotal point. In the heart of Jazan, surrounded by its beauty, charm, and rich cultural heritage, we are inspired to take the leap forward, push the limits, and have a lasting impact on our patients in all cities across the kingdom.

At this event, neurosurgeons and experts shared their recent clinical experiences in the field.
International guest speakers included
The meeting was held over a period of 3 days. The first day (9 February 2024) was dedicated to workshops.
Our conference featured internationally and nationally renowned neurosurgery pioneers.
Their presence ensures thought-

provoking discussions and learning

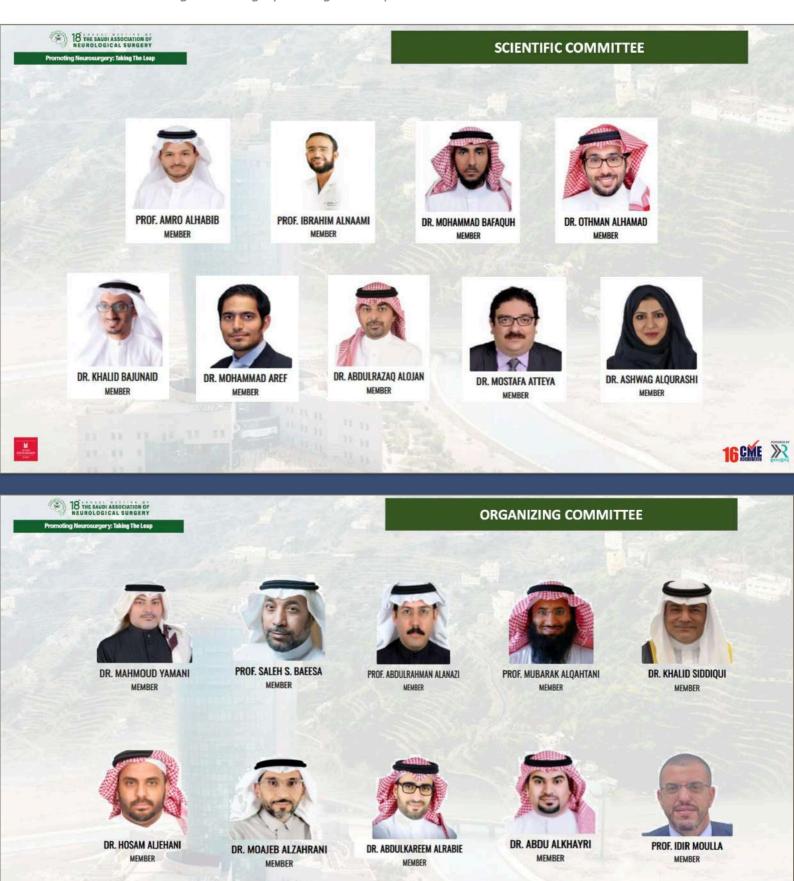
from the best in the field.



16CME X

#SANS 2024

Promoting Neurosurgery: Taking the Leap



Promoting Neurosurgery: Taking the Leap

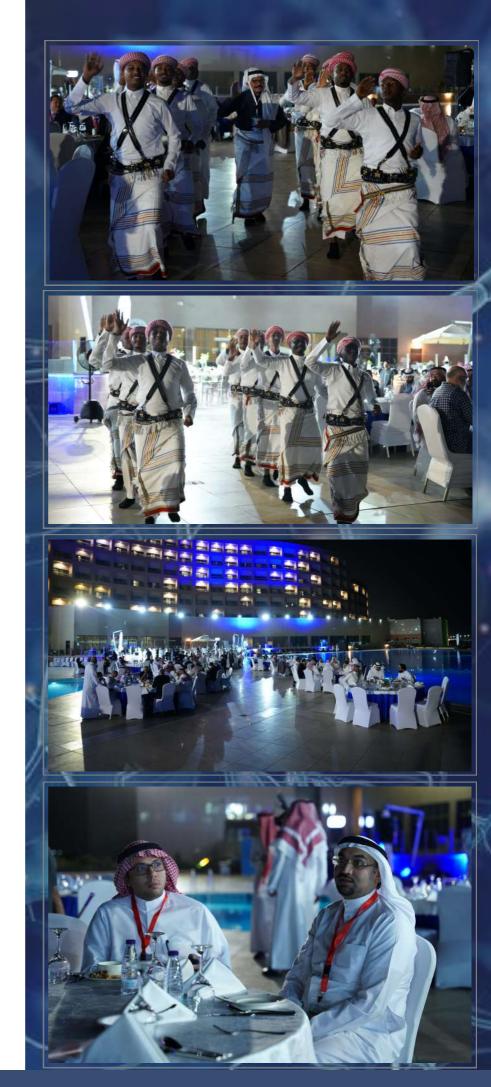


THE OPENING CEREMONY

The opening ceremony of The 18th Annual Meeting of the Saudi Association of Neurological Surgery was held on February 10th Saturday concluded with an opening reception at the Grand Millennium Hotel. The venue, live music and conversation combined for a memorable evening.

The opening reception and faculty dinner were exceptional events for our association members and meeting attendees to get to know each other personally and to restrengthen the scientific and social bonds to advance our practise in the field of neurosurgery.

Please enjoy the photos of the event



Keynote Speeches



PROFESSOR KALAF AL MOUTAERY LECTURE

This special session was dedicated to the lecture of the late Professor Kalaf Al Moutarey.

Professor Frederick Boop delivered this memorial lecture. His presentation, "The Age Global Initiative on Childhood Cancer-Neurosurgeons as Advocates" was engaging.

PROFESSOR ZAIN ALABEDEEN JAMJOOM LECTURE

This special session was dedicated to the lecture of the late Professor Zain AlAbedeen Jamjoom.

Professor Abdulhakim Jamjoom delivered this newly memorial lecture. He gave a very interesting talk titled "Neurosurgery in Saudi Arabia: A Bibliometric Review and Personal Observations.



Pre-conference workshops

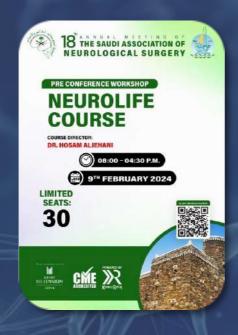
The first day of the conference (9 February 2024) was dedicated for the workshops

These workshops were:

- Intensive Neuroscience Nursing Skills (INNS)
- Full Endoscopic Hand-on Training
 Course on Lumbar Spine
- Pituitary Adenoma Intensive Course
- Student Neurosurgical Boot Camp
- Neurolife Course
- Pediatrics Neurosurgery Review Course









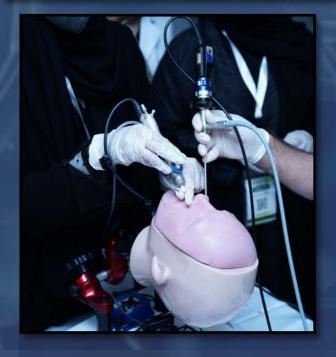
PHOTOS FROM THE WORKSHOPS













Award Winners

SANS GOLD AWARD MEDAL



Upon the occasion of the 18th Annual Meeting of the Saudi Association of Neurological Surgery (SANS) from Feb 09 to 11, 2024, the SANS Gold Medal was awarded to Dr. Al Bin Salamah from Saudi Arabia.

Dr. Ali has been selected as the 2024 recipient of the SANS Gold Medal for his longstanding contributions to the field of neurosurgery. SANS awards this medal each year during the annual meeting to a neurosurgeon in

recognition of his or her outstanding contributions to the specialty.

The brain clearly showed itself as Dr. Ali's destiny one day during his residency in ENT. He encountered a case that involved collaboration with neurosurgery, and it was his first time attending a neurosurgery procedure. This procedure led him to be a neurosurgeon.

Dr. Ali combines clinical skill and compassionate care to maximise patient outcomes.

Award Winners

Neuro Graphia IV

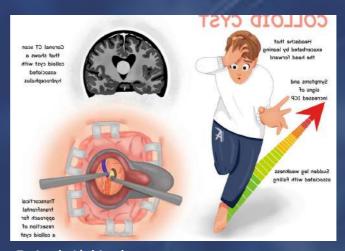
.The latest meeting of SANS unveiled the fourth edition of NeuroGraphia,

a groundbreaking competition that has transformed an enduring idea into an exciting reality.

NeuroGraphia aims to inspire an appreciation for the intersection of neuroscience and art, fostering creativity and interest in neurosurgical and neuroscience illustrations. The competition is divided into two categories: Scientific Illustration and Artistic Abstract.



#NeuroGraphia Scientific Illustration Competition



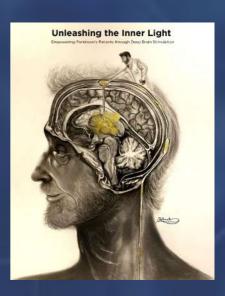
Fatimah Alghirash King Faisal University | Al-Asha Medical Student

1st Place

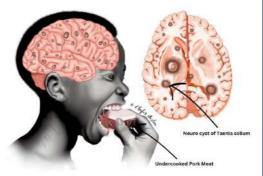
Rahmah Majed

Dar Al-oloum University l Riyadh Medical Student

2nd Place



Neurocysticercosis



Neurocysticercosis is a parasitic infection of the central nervous system caused by the larvae of the pork tapeworm, Taenia solium. The larvae form cysts in the brain or spinal cord, leading to neurological symptoms. It is a significant public health concern in regions with inadequate sanitation and pork consumption. Chafor Nkemetia Anslem Bamenda | Cameroon Medical Student

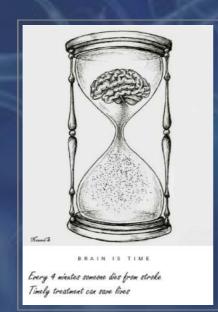
3rd Place

#NEUROGRAPHIA IV

Artistic Abstract Competition

Naqeeb Salam Northwest General Hospital & Research Center | Pakistan Resident

1st Place





Omar Ibrahim Aljohani King Abdulaziz University l Jeddah Medical Student

2nd Place

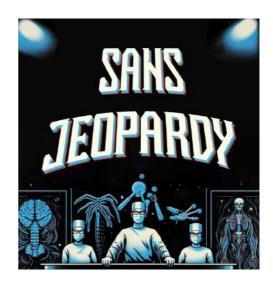


tDieunedort Arnold Djaowe Menga Cameroon Medical Student

3rd Place

#SANS JEOPARDY

The SANS Jeopardy Competition, held in Jizan on February 9, 2024, was an exciting event that showcased the teams' exceptional knowledge and skills. Both spectators and competitors displayed remarkable enthusiasm and engagement, and the competition drew a remarkable collection of great individuals.



The winning team was "the PSMMC - Riyadh Team," which was led by Drs. Wafaa Aldefairi and Leena Alshehri. Throughout the competition, they had outstanding performance and displayed an outstanding strategic approach. The first award is rightfully theirs.

In second place, the group led by Drs. Abdullah Alater and Sarah Alnufaily from KSU in Riyadh came out on top. Their outstanding collaboration shone through the entire competition, propelling them to the second place win.

Enjoy the photos of the event







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SANS





SANS 2024

IN NUMBERS

Record number of delegates at our annual SANS meeting on 9 February 2024!

Jazan Grand Hotel was buzzing with over 200 delegates, exhibitors and speakers.

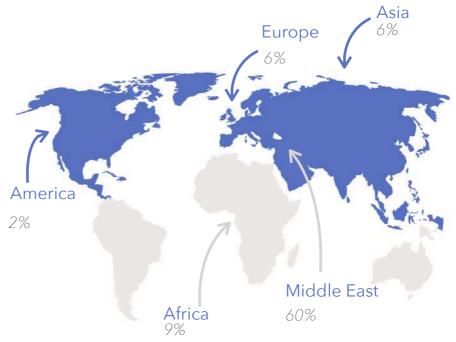
SANS 2024 was an event filled with insightful discussions, exciting announcements, and a celebration of our community's impact.

Our two keynote speakers inspired and motivated the delegates to move forward with enthusiasm and some great new strategies.

Fantastic feedback:

"It was an exceptional and enriching opportunity to learn and participate in such a conference."

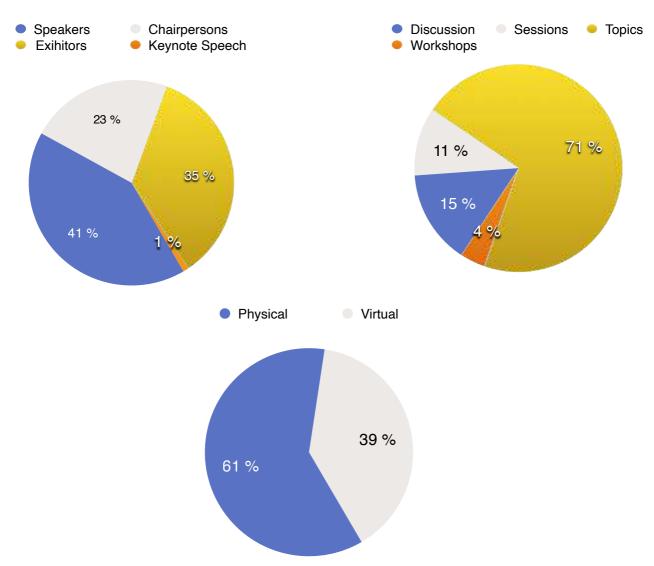
"I felt privileged to participate in this wonderful gathering, thoroughly enjoying my time. Additionally, I had the opportunity to meet exceptional students. Grateful for such a valuable



The annual meeting is a crucial platform for us to reforest on our accomplishments and address challenges. Your engagement and commitment to our shared mission are what make these gatherings impactful.

SANS 2024

IN NUMBERS



The 18th Annual Meeting saw record-breaking attendance, with **1246** attendees participating live in Jazan and online.

SEE YOU NEXT YEAR!

The annual meeting is a crucial platform for us to reforest on our accomplishments and address challenges. Your engagement and commitment to our shared mission are what make these gatherings impactful.

THE SAUDI SKULL BASE FELLOWSHIP

Dr. Faisal FarrashProgram Director of Skull Base
Fellowship
KFSH&RC | Rivadh

The Saudi Skull Base Fellowship aspires to become a leading fellowship programme locally as well as globally, and it is the first of such programmes in the region.

In 2020, the Fellowship opened its doors and accepted its first Fellow. Two consultant neurosurgeons specialising in the skull base who work at two of Riyadh's major tertiary centres have earned their degrees: Drs. Basim Noor-Elahi and Ashwag Alqurashi.





OVERVIEW

The neurosurgical skull base fellowship in Saudi Arabia is a twoyear training program designed to prepare individuals for successful academic careers in cranial neurosurgery and skull base surgery and related disciplines.

During the program, applicants rotate between three major tertiary hospitals in Riyadh, KFSH&RC, KKUH and KFMC. Rotations also include ENT surgery for the anterior and lateral skull base, radiotherapy, medical oncology, an elective rotation and the opportunity to spend time abroad in a recognised international centre after acceptance to the program. Fellows also participate in resident teaching activities, skull base rounds, skull base tumour boards, spend some time in the anatomy lab and simulation centre, and are encouraged to publish at least one or two papers and contribute to scientific research during their training.

It is also worth noting that two skull base training courses are held in Riyadh each year, one focusing on open skull base approaches and the other on endoscopic approaches. These courses are exclusively led and organised by fellows. As the program expands to the international horizon this year, we have accepted two international candidates, one from Latin America and one from the neighbouring country of Sudan. At the end of each year, fellows undergo a rigorous evaluation process and must pass the end-ofyear promotion exam to advance to the next level. at the end of the year, fellows undergo a final written and oral examination and must submit a surgical logbook at the end of the year, usually reflecting their involvement in skull base cases, their exposure and their contribution (currently fellows have been involved in more than 100 complex skull base cases in the first 6 months of their training), which exceeds the number of cases in some of the largest international centres in the field.

The National Saudi Skull Base Fellowship is a comprehensive training program designed to provide the highest standards of skull base surgery care in the Kingdom, attracting applicants from around the world and competing with international programs, aiming to provide the best possible care.



Dr. Abdulrahman Sabbagh King Abdulaziz University, Jeddah I Saudi Arabia

There are awareness-raising activities include World Brain Tumour, which focuses on global awareness and honouring those affected by brain tumors. In the UK, a moment of silence is observed on the first Monday in March to remember those affected by brain tumors.

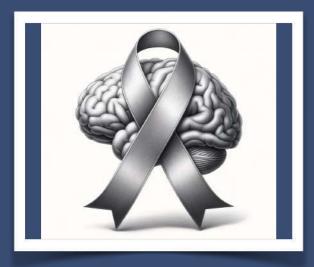
In Saudi Arabia, we have made great progress in the treatment and management of brain tumors. Advanced therapeutic

Go Grey in May: Advancing Brain Tumour Awareness and Care in Saudi Arabia

technologies such as neuronavigation, intraoperative ultrasound, CUSA (Cavitron Ultrasonic Surgical Aspirator), advanced microscopy and brain mapping are widely available in key regions, ensuring access for patients.

Specialised treatments, including a CyberKnife in Jeddah and Riyadh, a Gamma Knife in Riyadh and a proton beam therapy device under construction at King Fahad Medical City (KFMC) in Riyadh, further enhance our capabilities. A robust referral system ensures that patients requiring advanced treatments are efficiently directed to quaternary care centres.

Today, Saudi Arabia has a stateof-the-art healthcare system with a vibrant community of neurosurgeons and medical professionals committed to improving care. Leadership within the government and medical community has been instrumental in driving these improvements. Building on the foundation laid by our pioneers Prof. Lieutenant General Khalaf Almutairi and Prof. Zainalabedeen Jamjoom (may God have mercy on their souls) in the early 1980s, we look forward to even greater progress. Our Vision 2030 aims to bring Saudi Arabia to the forefront of medical advancement. We are committed to further expanding our capabilities through more research and development, improving our tumour registry coverage, and participating in national and international clinical trials and other projects.



May is the month of Brain Tumour Awareness and was chosen because it is associated with spring in the northern hemisphere and symbolises hope and renewal. This is in line with the campaign's goals of inspiring optimism and promoting advances in brain tumour research and treatment.

References: click here & here

FROM MEMBER TO MEMBER

NEWS

The Distinguished Service Award is awarded by John's Hopkins Aramco and given in gratitude and appreciation for dedicated service.

Dr. Salah Al-Akkad, Head Neurospine and Consultant, has shown exceptional dedication to clinical care, teaching and service, which earned him the Distinguished Service Award. As a neurosurgeon, Dr. Akkad has made significant contributions in JHAH. In 2004, he founded the Neurospinal Unit.

Dr. Akkad is Imam Abdulrahman Bin Faisal graduate who completed residency at University of Manitoba and the Royal College of Surgeons fellowship.





TECH TALK

The Brilliant Medic's: Our bright medical student Omar Aljohani from King Abdulaziz University introduces neurosurgical calculators

In a groundbreaking move, a talented medical student has launched a new website featuring a state-of-the-art Neurosurgical Calculator.

The Neurosurgical calculator is an initiative, that aims to provide a comprehensive library of different scales and scores and calculations done in Neurosurgery in a user friendly environment, with clear interpretations and information on each scale and score, to support your practice and research with evidence based tools and measures.

Available at NeuroCalcs.com, this resource poised to us improvement in the decision-making process. The medical community eagerly awaits the impact of this brilliant student's intuitive.

BOOKS & NEWS

Samer S. Hoz · Oday Atallah · LiMa · Zaid Aljuboori · Mayur Sharma · Mustafa Ismail · Maliya Delawan Editors

Surgical Neuro-Oncology In Multiple Choice Questions

Tumors of the Spine and Spinal Cord

Waeel O. Hamouda, Minaam Farooq, Iman Mohamoud, and Samer S. Hoz

Congratulations to Dr. Wael Ossama Hamouda on the chapter titled,"Tumors of the Spine and Spinal Cord".



CNS | 224 ANNUAL MEETING

HOUSTON, TEXAS • SEPTEMBER 28-OCTOBER 2, 2024

Mark your calendar for the 2024 CNS Annual Meeting and take advantage of plenty of interactive learning opportunities.
For more information click **here**.



- INNOVATION
- EDUCATION
- · LEADERSHIP

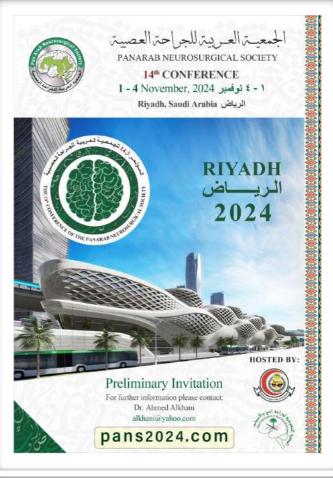
October 13 - 17

Mark your calendar for the 2024 EANS Annual Meeting and take advantage of plenty of interactive learning opportunities.

For more information click **here**.

WELCOME TO RIYADH

PAN Arab Neurosurgical Society





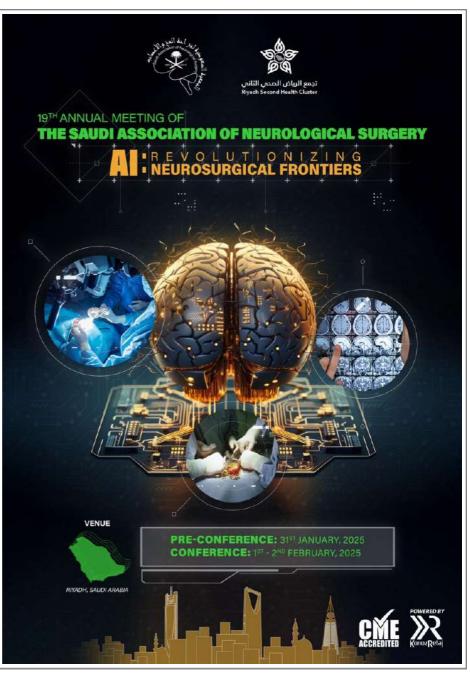


UPCOMING

EVENTS

WELCOME TO RIYADH

19th Annual Meeting of SANS



The Newsletter is a group effort. We rely on contributions from our members and others for all content on this page. Editor **Atika AlSudairy** coordinates the creation of the newsletter with the help of the editorial board.

Please Submit articles, job changes, promotions, or other member news to: **SANS.newsletter@sans.org.sa**