

### *SRS Essentials: A Free International Lecture Series Advancing Stereotactic Radiosurgery Education Across Underserved Regions*

In June 2026, SRS/SABR Essentials was delivered as a free three-part international online lecture series focused on linac based stereotactic radiosurgery. The course was conducted through Microsoft Teams and was designed for the wider radiation oncology team, including medical physicists, radiation oncologists, dosimetrists, radiation therapists, clinical scientists, and trainees. The series aimed to support advanced radiotherapy education across underserved regions by connecting practical clinical experience with international standards in SRS commissioning and quality assurance.

The lecture series was presented by Rahim Gohar, Medical Physics Specialist at GenesisCare, Queensland, Australia, and organized in collaboration with The Aga Khan Hospital, Dar Es Salaam, Tanzania, with K M Masud Rana serving as host and coordinator for Africa.

### SRS/SABR Essentials:

*A Medical Physics Course from First Principles to Clinical SRS Practice*

| LECTURE 1 — SRS1                           | LECTURE 2 — SRS2                           | LECTURE 3 — SRS3                           | FORMAT    |
|--------------------------------------------|--------------------------------------------|--------------------------------------------|-----------|
| [ Saturday 13 <sup>th</sup> of June 2026 ] | [ Saturday 20 <sup>th</sup> of June 2026 ] | [ Saturday 27 <sup>th</sup> of June 2026 ] | [ Teams ] |

**About the Course**  
SRS/SABR Essentials is a three-lecture course for the full radiation oncology team, from radiobiological foundations through geometric QA to real-world clinical commissioning. Each lecture is self-contained or attended as a complete series.

**Course Programme**

#### 1 Foundations of Stereotactic Radiosurgery

*Clinical Rationale - Radiobiology - Technology - Prerequisites*

- SRS History & Leksell's concept (1951)
- Intracranial & extracranial indications with evidence
- LQ model, BED, and the 3 Rs in SRS context
- GK vs. CyberKnife vs. Linac — systematic comparison
- Staffing, equipment & commissioning pathway
- AAPM MPPG 9.0 - TG-142 - IAEA TRS-483

#### 2 Hitting the Mark

*Radiation Isocenter Accuracy - Winston-Lutz Test - IGRT Collaboration*

- IEC 61217 Isocenter Hierarchy — the four isocenters
- Gantry sag, sphere of uncertainty & clinical impact
- WL test: 3D reconstruction from 2D projections
- WL Pin Map calibration to the MV Isocenter
- Dosimetric consequences of isocenter error in SRS
- SIMT off-axis WL extension

#### 3 Navigating Precision Medicine: Unveiling Our SRS Journey

*Commissioning - Clinical Implementation - Lessons Learned*

- Linac beam data & small-field dosimetry
- MapCHECK & EBT3 film dosimetry validation
- Exactrac Dynamic commissioning & KV-MV calibration
- End-to-end testing, external audit & governance
- Two years of clinical SRS — outcomes & lessons
- MOSAIQ workflow, SIMT errors & clinical impact

**What You Will Gain — By Role**

**Medical Physicists**  
Master isocenter verification, WL mathematics, small-field dosimetry, and the full commissioning pathway aligned with AAPM MPPG 9.0 and TG-142.

**Radiation Oncologists**  
Understand the radiobiological rationale for SRS fractionation, clinical indications, and how geometric accuracy impacts tumour control and OAR safety.

**Dosimetrists**  
Deep understanding of SRS plan quality metrics — CI, GI, dose prescription — and the physics behind sub-millimetre accuracy in SRS.

**Radiation Therapists**  
Learn how isocenter calibration, CBCT matching, Exactrac guidance, and couch corrections connect directly to patient safety.

**SPEAKER/LECTURER**



**Rahim Gohar, ACPEM - DIMPCB - Medical Physics Specialist**  
Medical Physics Specialist with extensive experience in linac-based SRS commissioning and clinical implementation. Established the intracranial SRS programme in Queensland. Active TRAP tutor, mentor, and assessor.

**HOST & COORDINATOR — AFRICA**



**K M Masud Rana**  
Lead Medical Physicist  
Department of Oncology  
Aga Khan Hospital, Dar Es Salaam, Tanzania

**ORGANISED BY**  
The Aga Khan Hospital, Dar Es Salaam, Tanzania

**Registration Link**  
<https://forms.gle/JaKvWfo63WDbob7>

**QR Code:**



**Scan Me**

**Enquires:**  
[masudhysicist@gmail.com](mailto:masudhysicist@gmail.com)  
Mobile (WhatsApp): +255764995131

Lecture 1: Foundations of Stereotactic Radiosurgery introduced the clinical and radiobiological basis of SRS. It covered the historical development of radiosurgery, major clinical indications, the linear-quadratic model, BED/EQD2 concepts, and comparisons between Gamma Knife, CyberKnife, and linac-based SRS platforms. The session also highlighted staffing, equipment needs, small-field dosimetry, and commissioning requirements for a safe SRS program.

Lecture 2: Hitting the Mark focused on geometric accuracy, which is essential for safe SRS delivery. Topics included radiation isocenter accuracy, the Winston-Lutz test, gantry sag, image-guidance calibration, kV–

MV alignment, and the dosimetric consequences of isocenter errors. This lecture emphasized how sub-millimeter precision directly affects treatment accuracy and patient safety.

Lecture 3: Navigating Precision Medicine: An SRS Journey presented a real-world experience of establishing a clinical SRS program. The lecture discussed machine acceptance, beam commissioning, ExacTrac Dynamic commissioning, small-field dosimetry, MapCHECK and EBT3 film validation, end-to-end testing, external audit, clinical workflow challenges, and lessons learned from two years of clinical SRS implementation.

Overall, SRS Essentials served as a valuable professional development initiative by making high-level SRS physics and clinical implementation knowledge freely accessible to colleagues across different regions. The series reinforced an important message: safe expansion of advanced radiotherapy requires not only modern technology, but also structured training, practical expertise, and international knowledge-sharing.