



THE AGA KHAN UNIVERSITY

Centre for Innovation in Medical Education
Pakistan & East Africa

INNOVATE. EDUCATE. ELEVATE.



One CIME | Year in Review 2024



Honouring Prince Karim Aga Khan IV *Our Founding Chancellor*

AKU-CIME—like AKU itself—was established upon the vision of His late Highness Prince Karim Aga Khan to improve public health in low-resource regions, and to make quality healthcare education accessible to all.

Today, we witness the profound impact of this vision as countless students, educators, and professionals walk through our doors, honing their skills, embracing new technologies, and carrying forward the mission of excellence in healthcare.

The dream of Prince Karim Aga Khan IV was not just to build institutions, but to transform lives. And that dream lives on.

We honor him. We thank him. And we remain forever inspired by his generosity, by his belief in education as a force for good, and by the remarkable legacy he leaves behind.

"In everything we do, we must look to the future, seeking always to think creatively, to innovate and to improve. I urge all those involved with the Aga Khan University never to forget that the future is in their hands."

- His Highness Prince Karim Aga Khan IV at the AKU Charter Acceptance Ceremony, March 16, 1983



Hear from Our Directors

As we round up our first year as Directors of AKU-CIME in Karachi and Nairobi, it's undeniable that it has been nothing short of a rollercoaster ride! From navigating challenges to celebrating wins, every moment has been an exciting adventure with our creative, passionate, and incredible teams.

This year has been particularly meaningful as we reflect on the visionary leadership of our late Chancellor, His Highness Prince Karim Aga Khan IV, whose vision and commitment to the advancement of education and innovation is what laid the foundation for AKU-CIME. His belief in the power of knowledge and technology to transform healthcare, and immense love for knowledge sharing and accessibility, continues to inspire our mission at CIME.

In 2024, we've continued to push the boundaries of what's possible in equipping healthcare professionals for an ever-evolving world. Together, we are building a future where CIME is not just a centre for simulation learning, but national leaders in transforming education in healthcare.

As we look to the future, we are energized by the opportunities ahead—to innovate, educate, and elevate. Thank you to the incredible faculty, staff, partners, and learners who have been our co-pilots on this ride.

The best is yet to come!

Warm regards,

Dr Faisal Ismail, Director, AKU-CIME South Asia

Dr Michael Money Penny, Director, AKU-CIME East Africa

**HERE'S
ALL
WE'VE
BEEN
UPTO**



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The Impact of SIMPACT

SIMPACT 2024 was the first-of-its-kind hybrid conference on healthcare simulation, held simultaneously at our Centres in Karachi and Nairobi. It was a thrilling celebration of innovation and collaboration in healthcare education, hosted by the Aga Khan University! Bringing together brilliant minds from around the globe, the event showcased cutting-edge simulation technology, hands-on workshops, and thought-provoking discussions. From reimagining training techniques to exploring the future of healthcare education, SIMPACT 2024 wasn't just an event—it was a movement, empowering educators, networking with industry experts, and inspiring learners to push boundaries and make an impact.





2
regions

600+
attendees

14
workshops

90+
abstract
submissions

15
exhibitors

7
start-ups

..and tonnes of
networking, learning,
and inspiration!

Gamified Learning at Simulation Week

CIME celebrated the International Healthcare Simulation Week 2024 from September 16 to 20, 2024, with a series of innovative sessions, showcasing the power of applied gamification in healthcare education. Held at CIME campuses in Karachi and Nairobi, the event focused on cutting-edge simulation techniques designed to enhance the clinical skills of healthcare students and professionals alike.

More than 300 participants from various institutions participated in over ten interactive competitions and games covering a wide range of healthcare topics.

- **CPR Race**
- **Cardio Clash**
- **Nursing Sprint Relay Race**
- **The Laparoscopy Games**
- **Moulage Workshop**
- **Heart Sound Showdown**
- **POCUS Pro Challenge**
- **Suturing Skills**
- **BLS Challenge**

300+
participants

10+
games

Participation from
students, professionals,
and leaders in
healthcare.



CIME Pakistan and Nairobi have had an eventful 2024 with a variety of healthcare simulation workshops, and trainings, networking activities with partners, and tours. Here is a quick highlight for each region!

Updates from Karachi

Apart from the hundreds of activities that happened throughout the year, CIME Karachi proudly hosted its three signature programmes in healthcare simulation, attended by healthcare professionals, educators, as well as IT and engineering experts:

- Clinical Simulation Educators Programme
- Clinical Simulation Technologist Programme
- First Responder Course for Teachers



Other than our own simulation specials, we partnered with healthcare professionals and educators from the AKU community and across the country for impactful sessions training hundreds of students and professionals on diverse areas of healthcare.

The PULSE Conference

Dedicated to cardiac professionals and educators, the 5th PULSE Conference of the AKU Medical College, Pakistan spotlighted innovative approaches to cardiovascular care and featured a series of impactful pre-conference simulation workshops hosted at CIME.



Dermatology 101

CIME collaborated with the Section of Dermatology, Department of Medicine, and GSK Pakistan to host a workshop on “Management of Common Dermatological Disorders,” engaging 36 General Practitioners eager to enhance their dermatology skills.



Distance Simulation

Dr Jabeen Fayyaz, Medical Director at Sim-Kids, led a session on ‘Virtual Voyage: Navigating Healthcare through Distance Simulation,’ engaging attendees from Karachi and Nairobi on strategies, effectiveness, and future directions in distance simulation.



Partnering with WHO

CIME, AKUH, WHO, and Sindh’s Health Department delivered simulation-based workshops for Karachi’s nurses and doctors, equipping them with hands-on skills to manage high-risk scenarios and improve patient outcomes in Sindh.



Malaria Elimination

AKU, in collaboration with the Global Institute of Disease Elimination and Sindh’s Health Department, hosted a ‘Case Management Workshop’ at CIME, training physicians to improve malaria care in resource-limited settings.



Hyperacute Stroke Code

The Department of Neurology, AKUH, and CIME hosted Pakistan’s first award-winning interprofessional hyperacute stroke code training, enhancing clinical, radiologic, and teamwork skills for healthcare professionals, addressing a critical need in stroke management.



Point-of-Care Ultrasound

CIME hosted a PULSE workshop led by Dr Noman Ali, training healthcare professionals in ultrasound-guided management of shock, respiratory distress, and cardiac arrest to enhance bedside decision-making and improve emergency care standards in Pakistan.



National Dental Congress

CIME hosted the PADS annual congress, gathering 300+ participants from Sindh for workshops on Basic Life Support, 3D Printing, and a keynote on Simulation in Dentistry by Dr Rabia Ghafoor.



Special Mentions



In-Situ Code Blues

CIME's in-situ simulations across AKUH hospitals including outreach centers in Hyderabad and Kharadar, as well as non-clinical areas, bring realism to training and quality improvement to patient care. For example, Victoria, a high-fidelity birthing simulator, tested an OR team's response to a sudden gynecological emergency, enhancing preparedness and patient safety.



Starting Sim Consults

This year, CIME launched Sim Consults, a weekly online consultation offering tailored simulation-based support for healthcare teams. The easy accessibility to a simulation expert through this service continues to disseminate simulation-based education with a global audience.



Honoring Dr Charles Docherty: Donation of Guamard Scientific

CIME thanks Guamard Scientific for their generous donation of three Obstetric Mixed Reality Microsoft HoloLens 2 units to enhance obstetric emergency training. This technology complements AKU's Victoria birthing simulators, advancing simulation-based education and honoring Professor Charles Docherty's legacy.

Hosting Examinations

AKU continues to lead advancements in medical education by hosting two prestigious examinations at its Centre for Innovation in Medical Education (CIME) this year.

For the second consecutive year, AKU, in collaboration with the Royal College of Surgeons of Edinburgh (RCSEd), hosted the Membership of the Royal College of Surgeons (MRCS) examination. This rigorous assessment evaluates surgical trainees' expertise in anatomy, physiology, and clinical skills, contributing significantly to the enhancement of surgical education and training in Pakistan.

In a significant milestone, AKU also hosted the critical care examination of the College of Physicians & Surgeons Pakistan (CPSP) for the first time at its Karachi campus. Attracting medical graduates from across the country, the CPSP examination assesses aptitude in various specialties, further cementing AKU's commitment to advancing healthcare education and training.



Community Outreach

CIME's community outreach initiatives, in collaboration with SPIE, focused on empowering diverse groups through our signature First Responder Course. From teachers and corporate teams to children and students of The Citizens Foundation schools in rural Sindh, these sessions equipped participants with essential emergency response skills, fostering a culture of preparedness and lifesaving knowledge across communities. CIME also worked closely with The Dawood Foundation's MagnifiScience Center to pilot teaching life-saving skills to children aged 8-12 years using simulation. Children practised CPR, learnt to stop bleeding and burn management on simulators, all while having fun.

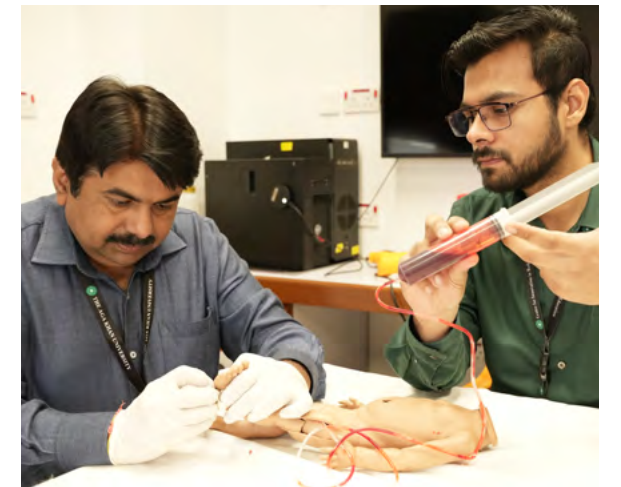
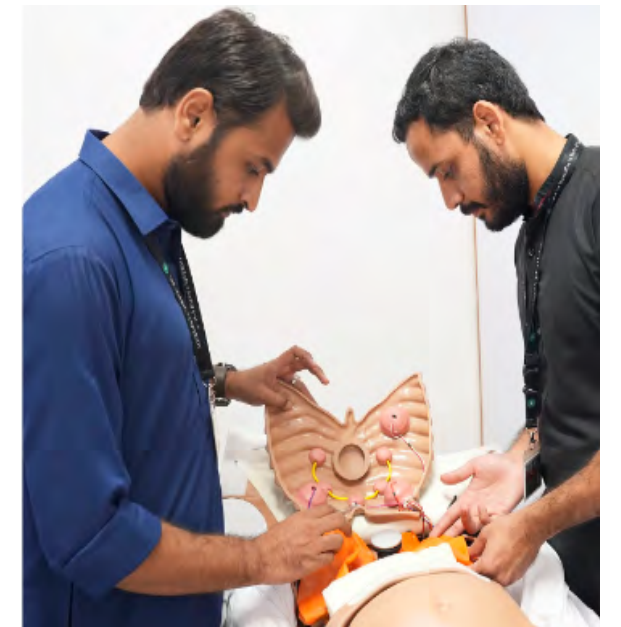


In-House Innovations, Out-of-the-Roof Savings!

CIME's in-house innovations focus on cost-effective solutions for training equipment maintenance. By partnering with the dHRC team, CIME Karachi repaired epidural and spinal injection trainers for 5,000 PKR, slashing replacement costs. When the Code Blue III simulator developed leakage issues, local solutions reduced repair costs from \$1,100 to under 10,000 PKR, ensuring sustainability and minimizing downtime.

Our in-house innovations include:

- Fiber Optic Intubation Task Trainer
- VR-based Bronchoscopy Trainer
- Heel Prick Trainer
- Low-cost Baby Warmer



**DON'T
JUST
TAKE OUR
WORD
FOR
IT**



CIME Pakistan by the Numbers

3,000+

Trainings
& Sessions

63,000+

Total Hours of
Teaching & Learning

117,530

Total participants/
attendees

Our Super Users

Pediatric & Child Health
Ob/Gyn
Medicine
SONAM
Post-RN BScN
programme

NES
Nursing Education
Services, AKUH

Pediatric & Child Health
UGME
Undergraduate Medical
Education, Medical College

Surgery
Dentistry

Updates from Nairobi

CIME East Africa enjoyed a happening 2024, marked by a vibrant array of activities. The year saw a strong emphasis on simulation-based learning, providing valuable hands-on experience and advancing critical thinking skills.

Key highlights included:

- Engaging workshops and seminars: These platforms facilitated knowledge sharing, skill development, and industry best practices.
- Robust networking opportunities: The Centre focused on building strong connections within the industry, enabling collaborations and partnerships.
- A focus on innovation: The organization encouraged and supported innovative approaches to engineering and construction challenges.
- Through these diverse initiatives, CIME East Africa continued to empower its members and contribute significantly to the growth and development of the engineering and construction sector in East Africa.



Clinical Simulation Educators Programme

CIME hosted CSEP in Nairobi in the month of June, this intensive programme gathered a cohort of more than 12 educators, healthcare professionals, and experts dedicated to advancing clinical simulation education.



ARISE Study

CIME and the Department of Obstetrics and Gynaecology collaborated with Johns Hopkins University to host a Laparoscopic Simulator Innovation Programme, enhancing technical skills and hand-eye coordination for Obstetrics and Gynaecology Residents in laparoscopic surgery.



Career Fair

AKU participated in the Woodcreek School Universities Fair on January 12, 2024, showcasing its undergraduate medical program and medical simulation via CIME. Multiple AKU departments engaged students, inspiring diverse career exploration.



Undergraduate Open Day

During AKU's Undergraduate Open Day on January 26, 2024, CIME Nairobi showcased simulation-based learning, high-tech simulators, and manikins, attracting students and guardians interested in AKU's medical and nursing programs from across Kenya.



Global SurgBox

GlobalSurgBox, a portable surgical simulator for trainees, was highlighted in a paper by Michael Kirsch. A CIME Nairobi workshop showcased its value, emphasizing collaboration and innovation in simulation-based surgical training.



University of Makerere

CIME Nairobi hosted a Makerere University delegation, showcasing 3D-printed simulators and OSCE spaces. Dr Money Penny highlighted simulation-based learning's role in East Africa, fostering collaboration as Makerere develops its simulation facilities.



3D Printing Adventures

CIME Nairobi hosted PRUSA 3D printer representatives to discuss healthcare applications and process improvements. Later, CIME staff attended a 3D printing seminar at the Czech ambassador's residence, presenting on "3D Printing in Healthcare."



Moulage Magic

CIME's Medical Moulage Workshop gave undergrad students hands-on experience creating lifelike wound simulations, enhancing practical skills, creativity, and teamwork. This event marked a significant step in advancing future healthcare professionals' training.



Hysteroscopy Workshop

CIME hosted a successful hysteroscopy workshop for Obstetrics and Gynaecology residents, featuring expert-led sessions, peer-led simulations, and technical skills development, in collaboration with industry stakeholders.



Salama House Event

President Sulaiman Shahabuddin's visit to Salama House on April 15, 2024, fostered unity and collaboration, with engaging interactions across CIME Dar Es Salaam, including discussions with faculty, students, and a Q&A session in the new classroom.



Welcoming Visitors

CIME Nairobi hosted Sister Eunice Bett and colleagues from MP Shah Hospital to discuss a Memorandum of Understanding with AKU, focusing on using Visually Enhanced Mental Simulation (VEMS) for training non-technical skills.



VAST Symposium

The Vital Anaesthesia Simulation Training (VAST) team held its Facilitators' Course at CIME Nairobi last month, attracting healthcare professionals from over 20 countries, with a focus on anaesthesia and perioperative care.



Advanced Airway Management

CIME hosted a workshop led by airway management experts from Qatar University. 27 healthcare professionals were trained in advanced airway techniques and critical rescue methods. The workshop also emphasized non-technical skills like teamwork and communication, providing valuable expertise enhancement for participants.



Open House

CIME Nairobi hosted students and professionals to explore healthcare education technology and simulators. The event inspired young attendees, who learned CPR and left excited about pursuing potential careers in healthcare.



Murder Mystery!

The CIME team and SPIE hosted a Murder Mystery Puzzle for first-year undergrads at AKU. Students explored CIME spaces, solved clues, and "arrested" William Mwikya. The event concluded with a Kahoot game and 3D-printed prizes, fostering a welcoming and engaging environment.





CIME Nairobi by the Numbers

CIME Nairobi hosted a variety of healthcare simulation workshops and courses in 2024. Here's a roundup by the numbers!

250+
Trainings
& Sessions

5,300+
Total attendees

Our Super Users

Continuing Medical Education

Internal Medicine **UGME** PGME
Medical College

SONAM Medical College
UGNE & PGNE

Pediatrics **Family Medicine**

SeeMe Around the Globe

CIME actively participated in international healthcare and simulation conferences, presenting oral and poster sessions to share innovations and advancements in simulation-based education.

Our team also engaged in expos and university visits, fostering valuable networking opportunities and exploring potential partnerships to further enhance simulation in medical training globally. Some of these were:

- International Meeting on Simulation Healthcare (IMSH), San Diego, USA
- Society for Simulation in Europe (SESAM), Prague
- Association of Surgical Education Annual Meeting 2024, Orlando, USA
- Association for Simulated Practice in Healthcare (ASPIH) Conference in Edinburgh.
- Meetings with partners and stakeholders in Germany and the United Arab Emirates.
- Meetings and keynote talks for local universities, partners and stakeholders in Lahore and Kijabe.



Research at CIME

In 2024, CIME Karachi and Nairobi have made strides in advancing cutting-edge research in simulation-based education, technology-enhanced learning, and patient safety. Our research explored innovative teaching methodologies, faculty development, and the impact of simulation on clinical outcomes, impacting excellence in healthcare training.

Publications

- **Past, present and future of simulation-based education.**
Dr Selina Hasan & Sameer Mallick | Journal of the Pakistan Medical Association
- **Challenges and opportunities in the uptake of simulation in healthcare education in the developing world: a scoping review.**
Dr Faisal Ismail | MedEd Publish
- **The ASPIH Standards – 2023: Guiding simulation-based practice in health and care.**
Dr Michael Money Penny | International Journal of Healthcare Simulation.
- **Exploring endoscopic competence in gastroenterology training: A simulation-based comparative analysis of AGES, DOPS, and ACE assessment tools**
Dr Faisal Ismail, Dr Rafia Durrani | Advances in Medical Education & Practice
- **Improving quality through simulation; developing guidance to design simulation interventions following key events in healthcare.**
Dr Michael Money Penny | Advances in Simulation

5
Publications
in Peer-Reviewed
Journals

6
Publications
Under Review

12
Manuscripts
in Writing

25+
Oral & Poster
Presentations at
Local Conferences



Oral & Poster Presentations at International Conferences

- International Meeting on Simulation in Healthcare (IMSH) 2024
- Society for Simulation in Europe (SESAM) Annual Meeting 2024
- Association for Simulated Practice in Healthcare Conference (ASPIH) 2024
- International Nursing Association for Clinical Simulation (INACSL) Conference 2024
- Association for Surgical Education (ASE) Annual Meeting 2024

Grant Submissions

Topic	Granting Entity
A Virtual Simulation Training on Pre-briefing: Building Simulation Education Capacity	Association for Simulated Practice in Healthcare (ASPIH) Research Grants Awards Application 2024
The Impact of Faculty Training in Distance Simulation on the Adoption of Simulation-Based Education in Undergraduate Medical and Nursing Curricula: A Pathway to Enhanced Learning Outcomes	Scholarship of Teaching and Learning (SoTL) Grant 2024
A Hybrid Clinical Simulation Educators Program: Building Simulation Education Capacity at Scale	Scholarship of Teaching and Learning Grant (SoTL) 2024
Preventing Birth Asphyxia in Rural Areas: Training Midwives for Early Identification of Maternal Factors in Antenatal Care	Center for Global Health Equity (CGHE) Seed Grant

The Dream Team

The year was filled with countless achievements and professional milestones for our teams in Pakistan and Nairobi. These include published research papers, awards, certifications in simulation education and leadership programmes, and many other capacity-building initiatives.

Teams in both regions also welcomed new members as the Centres continue expanding and evolving.

CIME Pakistan



22
People
Strong

CIME Nairobi



8
People
Strong





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