



1) Main themes across the conferences (what stays consistent)

A. “Innovation-to-impact” in LMIC surgical care (the core through-line)

Across all three programmes, the centre of gravity is **not innovation for its own sake**, but innovation that improves **access, safety, quality and affordability** of SOTA care (surgery, obstetrics, trauma, anaesthesia), particularly in rural or resource-constrained contexts.

- 2023 explicitly frames the goal as translating innovations for Sub-Saharan Africa and mapping **pathways for adoption/implementation**.
- 2024 expands this to “strengthening surgical systems,” pairing clinical advances with policy, ethics and systems approaches.
- 2025 deepens the “impact” lens with **equity, community voice**, and **policy/financing** tracks alongside technology.

B. Training, simulation and workforce scale-up (capability building as the multiplier)

A second consistent theme is that technology is valuable largely insofar as it helps **train, supervise, and retain** the workforce.

Examples of how this is expressed:

- **Simulation & skills training** (box trainers, laparoscopic simulation; endoscopy simulation/live training).
- **XR/VR/AR for training and teaching**: VR appears as early workshops (2023/2024), with AR (HoloLens live-streaming from theatre) appearing in 2024 abstracts—suggesting a move from “demo” to “training workflow” integration.
- **Trainee/student engagement**: hackathons recur every year; 2024 includes a future-of-global-surgery trainee panel; 2025 formalises student/trainee sessions including **workforce retention**.

C. Biomedical engineering & the full device lifecycle (design → regulation → maintenance)

All three programmes treat biomedical engineering as foundational—not an add-on.

Key emphases that recur:

- **Contextual design & affordability** (explicitly called out in 2025’s “Bio Med Session”).



- **From idea to product** (2024 biomedical innovation workshop), then into real-world constraints (manufacturing, regulatory terrain, maintenance).
 - 2023 and 2024 both emphasise **device maintenance**, supply chain and commercialisation; 2024/2025 add more explicit discussion of **local manufacturing** (“Africa-in-Africa”) and regulation.
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D. Frugal, sustainable, and “green” surgery (moving from principle to programming)

Sustainability shifts from a stated principle (2023) to a dedicated track (2024) and then to broader integration into debates and financing/policy (2025).

- 2023 includes “frugal, sustainable and green surgery” as a core objective.
 - 2024 has an explicit **Sustainable Surgery** session featuring environmental harms, circular hospital economy and sustainable equipment.
 - 2025 runs a **climate change & surgery / green surgery debate**, and adds **circular economy** into a financing/policy session—indicating maturation from “environmental concern” into “system design and budgets.”
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E. Health systems, policy, advocacy & ethics (the “rules of the road”)

A notable continuity is attention to **ethics, acceptability, advocacy, and systems governance** around innovation.

- 2023 explicitly includes ethics, acceptability and political advocacy; and features a health systems/policy/advocacy session plus a commercialisation session (finance, supply chain, business model, IP).
 - 2024 includes a keynote session on strengthening services and a panel on **ethics of global surgery innovation**.
 - 2025 extends this to **equitable surgical care** framing, “voices from the community,” social innovation, and sustainable financing/policy.
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2) What changed year-to-year (signals of the congress “direction of travel”)

ICIGS 2023 (Mombasa): translating innovation + responsible innovation in LMICs



The 2023 programme is strongly structured around **responsible innovation, context**, and a practical “innovation pathway”: identify need → design frugally/sustainably → evaluate → implement → scale.

It also anchors the conference identity in hands-on workshops (VR/urology, WALANT, flexible endoscopy, laparoscopic simulation), plus a hackathon on unmet SOTA needs in Eastern Africa.

ICIGS 2024 (Cape Town): systems strengthening + sustainable surgery + measurable evidence

By 2024 the agenda becomes more “health-system complete”: access, outcomes, leadership, system strategies/policies, ethics panels, and a visible emphasis on **evidence and evaluation** (abstracts, outcomes, mapping services).

Technology topics broaden beyond VR to include mHealth post-C-section monitoring, AR live-streaming, low-cost neurosurgical models, and local manufacturing/regulation—showing a shift from tools to **implementation reality**.

ICIGS 2025 (Malawi): equity + social innovation + climate + AI/digital health enters the centre

The 2025 programme leans into:

- **Equity framing** (“bridging gaps in global health”)
- **Social innovations** (a full session) and **community voice** (students/trainees/rural surgeons as panellists)
- **Climate and circular economy**: explicit debate and a sustainable financing/policy session grounded in circular economy.
- **Emerging tech as an industry-facing track**, explicitly naming **AI, telemedicine, and digital health**.

Also, the preconference workshop list adds **3D printing in LMIC**, suggesting expansion into distributed manufacturing and rapid prototyping.

3) Emergent topics to consider for the *next* conference (what’s “coming into focus”)

Based on the trajectory (2023 → 2024 → 2025), here are the most plausible **next emergent topics**—i.e., areas that are already appearing and are likely to become major tracks.

1) Responsible AI for surgery in LMICs (beyond “AI exists” → “AI that works safely”)



Since 2025 explicitly introduces AI/telemed/digital health as an “emerging tech” industry session, the next step is moving from awareness to **governance + evaluation + deployment**.

Natural next-conference angles:

- AI triage and decision-support in district hospitals (bias, safety, accountability)
- Data quality and dataset representativeness in African contexts
- Cost-effectiveness and workflow impact (does it reduce delays? complications? transfers?)

2) Digital training ecosystems: XR + remote proctoring + competency verification

With VR (2023/2024), AR streaming (2024), and digital learning hubs/tech-enhanced supervision (2024 abstracts), a likely emergent theme is an end-to-end **digital surgical education pipeline**—from simulation to supervised practice to credentialing.

Potential next steps:

- Tele-mentoring standards (quality, medicolegal, bandwidth realities)
- Competency-based assessment using simulation analytics
- Regional “training nodes” (hub-and-spoke models)

3) Local manufacturing, regulation and quality systems (closing the “device gap” sustainably)

2024 already surfaces regulatory terrain and local manufacturing; 2025 adds 3D printing workshops—together signalling “build it here” momentum.

What would feel genuinely “next”:

- Standards and QA for locally produced devices (including 3D printed parts)
- Procurement frameworks that reward maintainability and repairability
- Regulatory harmonisation pathways and post-market surveillance in LMICs

4) Climate-resilient surgical systems (from greening to resilience)

The sustainability arc (2023 principle → 2024 dedicated session → 2025 debate + circular economy financing) points to the next frontier: **resilience**—how surgical systems cope with extreme weather, supply shocks, energy instability, and disruptions.

A next conference could explicitly integrate:

- Power/oxygen resilience (including clean energy and maintenance capability)
- Supply chain continuity planning
- “Low-carbon, high-reliability” theatre pathways in district settings

5) Implementation science for surgical innovation (scaling what works)



2023 talks about pathways for implementation/adoption and evaluation; 2024/2025 show more applied examples and policy/financing sessions.

A strong emergent topic would be formalising:

- Pragmatic trials and real-world evaluation approaches
- Health technology assessment (HTA) methods suited to LMIC constraints
- Scale-up playbooks (partnerships, procurement, training, maintenance, monitoring)

6) Equity, ethics and community co-design becomes a design requirement (not a panel topic)

Equity framing and community voice in 2025 suggests the next step is making **co-design** operational: how you actually do it, measure it, and avoid extractive innovation practices. Potential track:

- Patient acceptability, cultural context, and trust
- Community-defined outcomes (what “success” means locally)
- Ethical pathways for innovation partnerships and IP that benefit local systems

4) Practical suggestions for structuring the next conference (ready-to-use track ideas)

If you’re shaping the next programme, a coherent structure (aligned to the trend line) could be:

1. **Equity & Social Innovation** (community voice, co-design, indigenous/local solutions)
2. **Digital & AI for Global Surgery** (AI, telemed, digital health; governance + evaluation)
3. **Training & Competency** (simulation, XR, remote supervision, retention)
4. **Sustainable & Resilient Surgery** (green theatre, circular economy, climate resilience)
5. **Engineering → Manufacturing → Regulation** (local production, QA, maintenance, regulatory pathways; 3D printing)
6. **Implementation & Policy** (HTA, financing models, procurement, scale-up)



Comparison of main themes by conference (ICIGS 2023–2025)

Conference	Stated theme / framing	Main thematic pillars (what dominated the programme)	Signature formats & focus areas	Notable “direction of travel” signals
ICIGS 2023 (Mombasa, Kenya)	“Translating Innovations in Sub-Saharan Africa” with an explicit aim to improve safe access to SOTA care in rural East Africa ¹	Responsible innovation in LMICs (context, unmet need, evaluation), training & simulation for rural surgeons, frugal/sustainable/green surgery , biomedical engineering , and pathways for adoption/implementation plus ethics/advocacy ²	Strong hands-on emphasis: workshops in laparoscopic/endoscopic simulation , VR/urology , WALANT , flexible endoscopy ; plus a hackathon on unmet regional SOTA needs; dedicated sessions on health systems/policy/advocacy and commercialisation (finance, supply chain, IP, maintenance) ³	Establishes the “innovation pipeline” logic: <i>identify need</i> → <i>design frugally</i> → <i>evaluate</i> → <i>implement/scale</i> , with explicit attention to acceptability, ethics and system-level adoption ⁴
ICIGS 2024 (Cape Town, South Africa)	Framed around access to safe and timely surgery and strengthening surgical systems , with explicit ethics programming and sustainability as a major strand ⁵	Access & outcomes (e.g., African surgical outcomes, leadership education), systems strengthening (strategies, policies, packages), biomedical innovation & engineering alongside clinical advances, ethics of global surgery innovation , and a dedicated sustainable surgery track ⁶	Pre-conference workshops in VR , hackathon , biomedical idea-to-product , and advanced minimal access surgery ; parallel abstract tracks (global surgery + engineering); sustainable surgery session covering environmental harms , circular economy , and sustainable equipment ⁷	Clear shift toward evidence + implementation realities : digital education/learning hubs, AR live-streaming, mHealth monitoring, low-cost models, plus attention to manufacturing/regulatory terrain and technology-enabled supervision ⁸
ICIGS 2025 (Malawi, KUSC)	Programme explicitly foregrounds equitable surgical care (e.g., “Innovating for Equitable Surgical Care: Bridging gaps in Global Health”) and expands “innovation” to include social, climate, financing and emerging tech themes ⁹	Equity + social innovation (including community perspectives), sustainable innovations with climate focus, biomedical innovation (context/affordability), students/trainees + workforce retention , sustainable financing & policy (circular economy) , and an industry-focused emerging tech strand naming AI/telemedicine/digital health ¹⁰	“Science café” on equity, Voices from the Community panel, climate/green surgery debate , innovation hot desk , hackathon + presentations; preconference workshops include 3D printing in LMIC , biomedical engineering, hackathon, and GILLS/urology ¹¹	The conference expands from “devices and training” into equity governance : community voice, social innovation, climate resilience/circular economy financing, and mainstreaming AI/digital health as a core innovation domain ¹²