Data-Driven Surgery Annual Conference

Newsletter | April 2026

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ORGANISED BY

SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY

Safe Surgery SA

From the Desk of the Conference Organising Committee

This edition of the newsletter reflects on the continued evolution of the Data-Driven Surgery initiative, building on the momentum of the 2024 and 2025 conferences. Across these engagements, a shared vision has emerged: data – when meaningfully collected, responsibly governed, and actively used – can strengthen surgical systems, improve decision-making, and advance equity in health systems across South Africa and beyond.

The 2025 Data-Driven Surgery Conference, hosted in collaboration with Sefako Makgatho Health Sciences University and Safe Surgery South Africa, brought together a growing community of clinicians, researchers, policymakers, and partners committed to advancing this agenda.
We extend our sincere gratitude to all delegates, moderators, speakers, and collaborators who contributed to the success of this engagement and to the depth of discussion reflected in this newsletter.

This edition highlights key messages from four important presentations that challenge us to think more deeply about how digital systems, workforce data, referral systems, and interoperability can support safer, more responsive surgical care. Together, these contributions reaffirm that data are not neutral: when translated into action, they become powerful instruments for health systems resilience, accountability, and equity.

Looking ahead, we are intentionally expanding this platform to strengthen regional collaboration and knowledge exchange.
We look forward to continuing this journey with you.

Building Systems for Equity: Reflections from the Conference

Advancing digital health, interoperability, workforce planning, and referral data for stronger surgical systems in South Africa.

MADE POSSIBLE BY GRANTS FROM

SPEAKER HIGHLIGHTS

Marlien Herselman - The Emerging South African National Health Information System

Marlien Herselman explored South Africa's transition toward an integrated digital health system, positioning it as both a critical opportunity and a complex systems challenge. Her presentation highlighted the need to move beyond fragmented information structures toward a cohesive national ecosystem supported by strong governance, interoperability, user-centred design, and sustained collaboration across institutions.

Drawing on the 2024 peer-reviewed book jointly published by the National Department of Health and the Council for Scientific and Industrial Research (CSIR), the presentation demonstrated that the national health information system is no longer merely aspirational but is actively emerging through policy, implementation experience, and cross-sector learning. Particular emphasis was placed on standards-based interoperability, capacity building, change management, and ethical systems design.

For surgical systems, the implications are substantial. Integrated digital health platforms can improve access to accurate patient information, support theatre scheduling, strengthen continuity of perioperative care, enhance safety, and improve multidisciplinary coordination. The key message was clear: digital health is foundational to modern surgical care and to equitable, resilient service delivery under South Africa's broader health reform agenda.

Key takeaways: A strong surgical system requires a strong digital health system.

Zane Farina - From Data to Decisions: Establishing the Surgical Workforce

Key takeaways: Good workforce planning depends on understanding the real constraints in the system, not just the most visible ones.

Zane Farina's presentation challenged participants to look beyond headline indicators and to interpret workforce data through a systems lens. While global surgery metrics such as access, surgical volume, outcomes and workforce density remain important, the talk cautioned against simplistic reading of these measures in isolation. Workforce density, for example, is not meaningful unless understood as the availability of balanced teams across surgery, anaesthesia and obstetrics.

A particularly important concept from the talk was the "rate-limiting step". Surgical backlogs and long waiting lists do not necessarily indicate a shortage of surgeons; the true bottleneck may lie in anaesthesia capacity, nursing shortages, equipment constraints, theatre time, or weak scheduling systems. In this way, data can mislead when interpreted without sufficient contextual understanding.

The presentation also highlighted how poorly functioning facilities may report not waiting lists at all, while better-functioning tertiary hospitals may report large volumes, showing how raw numbers can conceal rather than reveal need. The session further underscored the risks of over-reliance on single multi-skilled clinicians in smaller hospitals, and the need for structured training, staffing support, stronger referral pathways, and clearer district-level procedural capacity.

William Mapham - Data Insights: Surgical Referral Patterns

William Mapham presented referral data as a powerful lens through which to understand health systems performance. Using the analogy of a dragonfly, with its ability to sense and respond rapidly, the talk argued that high-quality, well-stewarded referral data can sharpen decision-making at the right place and time.

A central message was that Africa risks remaining "digitally invisible" when data are not generated, stored, and respected, or used effectively at scale. Referral-platform data, such as those generated through Vula, offer a practical opportunity to measure referral flows, delays, transport burdens, and movement across sectors. In South Africa, Vula is used by over 44,000 health workers across more than 2,400 facilities, with referral volumes equivalent to 1 in 30 South Africans. These insights can reveal where patients are delayed, where systems are under strain, and where resources may need to be reallocated.

The presentation also introduced the idea that measurement itself can improve performance by making responsiveness visible. Importantly, referral data were shown to reveal a substantial public-private interface in practice, challenging the assumption that the two sectors operate as entirely separate systems. This has major implications for planning, coordination, and advocacy.

Key takeaways: Referral data do more than track movement; they reveal how the system truly functions.

Matt Zylstra - Data Quality and Interoperability

Matt Zylstra's session focused on one of the most pressing issues in digital health: interoperability. The presentation emphasised that the real question is not simply how data are stored, but how systems communicate with one another while preserving meaning. Interoperability was described at foundational, structural, and semantic levels, with semantic interoperability identified as especially critical for ensuring that clinical information remains accurate and useful across platforms.

The talk discussed the growing momentum around standards-based exchange, including FHIR-aligned approaches, and reflected on the transition from the ICD-10 to ICD-11. This shift has important implications for how electronic health records are designed and how coding supports analytics, reimbursement, and benchmarking.

AI-enabling and semantic mapping were presented as promising tools, but only when careful code mapping preserves the original clinical meaning.

Risk adjustment was also highlighted as essential for fair comparison across facilities and patient populations. Ultimately, the session linked data quality and interoperability to broader goals of value-based care, sustainability, and reduced clinician administrative burdens through better-designed systems and tools.

Key takeaways: Interoperability is not just a technical issue; it is central to data quality, fairness and better care.

Emerging Themes

DIGITAL HEALTH IS FOUNDATIONAL TO SURGICAL SYSTEMS STRENGTHENING

DATA NEEDS CONTEXT

INTEROPERABILITY AND DATA QUALITY ARE INDISPENSABLE.

EQUITY MUST REMAIN CENTRAL

Closing Reflections

The 2025 Data-Driven Surgery Conference underscored that data are not merely technical assets; they are strategic tools for leadership, accountability, and transformation. These conversations reaffirm the importance of strengthening health information systems that underpin safe surgery, equitable access, and resilient health systems.

We thank our speakers, moderators, and delegates for contributing to a conference that moved beyond discussion toward a shared vision of data-informed action. We look forward to sustaining this momentum through continued collaboration, research, advocacy and learning.

These discussions mark not an endpoint, but a transition toward more coordinated national and regional action. In 2026, this work will continue through a national, policy-focused webinar designed to expand access, align stakeholders, and translate emerging insights into practical action. Looking ahead, these efforts will culminate in a planned Pan-African Summit in 2027, bringing together clinical leaders, policymakers, researchers, and digital health experts to advance surgical systems strengthening across the continent.

With appreciation – the DDSC Organising Committee

A Growing Trajectory

2024/2025 - Building momentum

The 2024 and 2025 Data-Driven Surgery conferences established a growing movement around surgical data, digital health, and systems strengthening.
What began as a platform for dialogue is now evolving into a coordinated, action-oriented network.

2026 - Expanding collaboration

The 2026 Data-Driven Surgery engagement will take the form of a virtual convening, in collaboration with the African Perioperative Research Group (APORG), creating an opportunity to connect a broader network of African stakeholders around shared priorities in perioperative data, research, and implementation.

2027 - Pan-African Summit

This trajectory continues into the planned 2027 Pan-African Summit on Data-Driven Surgery, which aims to bring together continental partners to consolidate learning, align research and policy priorities, and accelerate progress toward equitable surgical systems across Africa.

APORG
AFRICAN PERIOPERATIVE RESEARCH GROUP

This work is being shaped through growing collaboration across Africa, with APORG joining as a scientific co-organising partner across 2026 and 2027, strengthening research collaboration and strategic partnerships across the continent.

SAVE THE DATE!

DATA-DRIVEN SURGERY 2026

STRENGTHENING COLLABORATION ACROSS AFRICA

21 November 2026 **Virtual**

The 2026 virtual conference will bring together clinicians, researchers, policymakers, and partners to connect a broader network of African stakeholders around shared priorities in perioperative data, research, and implementation.

It marks the next step in strengthening collaboration, advancing implementation, and building a more connected data ecosystem with the APORG network joining and strengthening this effort across Africa.

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