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Theme 1. Digital health innovations

Economic pressures on doctor-led primary care and the role of point-of-care decision support in South Africa

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Background. The private primary healthcare (PHC) sector is undergoing transformation, such that doctors are required to deliver clinical care while simultaneously managing growing administrative, technological and financial demands. Doctor-led practices must navigate a fragmented funding environment in which medical schemes and medical insurance products coexist, often within the same patient population. In everyday practice, benefit interpretation, clinical decision-making and billing occur simultaneously, placing sustained administrative pressure on doctors. Unlike large healthcare groups, most independent doctor-led practices lack in-house administrative capacity, and are increasingly compelled to outsource functions such as claims management, coding support, virtual consultation platforms, practice websites, compliance services and patient communication tools. These escalating costs place pressure on practice margins, and threaten the long-term economic viability of independent medical practices.

Methods. A desktop review of publicly available regulatory and policy documents was conducted, covering 81 funding products accessed within PHC settings, including medical schemes and medical insurance products. This was complemented by a structured analysis of doctor-led PHC workflows, including reception, consultation, prescribing and billing, to identify points at which administrative complexity drives outsourcing and cost escalation. Funding products were mapped and assigned qualitative administrative and clinical risk scores. Based on these findings, a conceptual digital, scheme-agnostic decision-support framework was developed.

Results. Of the 81 products reviewed, 93% were medical scheme products and 7% were medical insurance products. While medical insurance products were consistently associated with high administrative risk, most medical scheme products clustered at low to moderate risk. Importantly, moderate-risk classifications still reflected frequent benefit ambiguity, repeated administrative interventions per consultation, and reliance on outsourced services. This cumulative burden was experienced daily by doctors, and contributed to increased operating costs, workflow inefficiencies and reduced clinical time, particularly in small and solo practices.

Conclusion. Doctor-led PHC practices face mounting economic pressure, driven by administrative complexity and the growing need to outsource non-clinical functions. A digital, scheme-agnostic point-of-care decision-support approach offers a practical innovation to reduce administrative load, limit unnecessary outsourcing and support the financial sustainability of independent medical practices in South Africa.

Clinical managers' readiness for AI adoption in rural public hospitals

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Background. South Africa's National Digital Health Strategy (2019 - 2024) positions digital transformation as a key mechanism to improve healthcare access and quality, and system efficiency. The strategy emphasises person-centred care, expanded access, innovation for sustainable impact, workforce capability development, and whole-of-government co-ordination. It also promotes interoperable health information systems, data-driven decision-making, strengthened governance and workforce digital capability. Artificial intelligence (AI) represents an advanced extension of this digitalisation agenda, offering opportunities to enhance clinical decision-making, optimise workflows and support population health management. However, adoption depends not only on technology availability but also on leadership readiness and organisational context. Clinical managers, who translate policy into operational practice, play a critical role in determining whether digital innovations elevate care delivery, yet limited evidence exists regarding their perspectives as a dimension of AI readiness in low-resourced, rural settings.

Main aspects of the research. This qualitative exploratory study investigated perceptions of clinical managers working in district, regional and tertiary public hospitals in a predominantly rural province. Semi-structured interviews explored awareness, perceived benefits, perceived risks and organisational readiness for AI integration. Data were analysed using thematic analysis. Managers viewed AI as potentially valuable in addressing administrative inefficiencies, supporting clinical decision-making, strengthening system integration and data-informed planning, and aligning with the National Digital Health Strategy's goals of improved quality and efficiency. However, this optimism was tempered by infrastructural limitations, unreliable connectivity, fragmented systems with poor interoperability, limited digital literacy, medicolegal uncertainty and unclear governance structures. Acceptance of AI was strongly associated with perceived usefulness, trust in system accuracy, and ease of integration into existing workflows, reflecting the need for human-centred implementation approaches emphasised in digital transformation frameworks.

Conclusion. The findings indicate that AI readiness in rural public hospitals mirrors the broader maturity level of the national digital health environment. Clinical managers demonstrate conditional support for AI as a tool to advance strategic digital health objectives, provided that implementation addresses infrastructure, interoperability, governance, and training gaps. Aligning AI deployment with the National Digital Health Strategy through change management, leadership engagement and capacity building is essential to ensure that innovation elevates healthcare delivery.

Addressing the need for digital transformation in the management of medical tariff and billing workflows

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Background. The accurate management of tariff amounts, annual revisions and billing processes in the medical aid industry is a critical function that must comply with audit and regulatory standards to ensure payment efficiency. Importantly, standardised quality assurance and control processes contribute to universal health coverage, and allow for continual improvement strategies. Digitisation of these processes provides an innovative integrated solution that will drive compliance with audit and regulatory standards to ensure payment efficiency, professional collaboration, enhanced outcomes, automated audit trails and unified systems, and support hybrid/remote working. A prior art search of medical tariff

and billing digital workflows has not yielded any tangible results; therefore, the presented work aims to develop a digital workflow for systematic management of tariff and billing processes.

Summary of main aspects to be presented. A panel of healthcare professionals, medical coding and billing experts, scientists, healthcare management experts, governance specialists and information systems specialists convened a working committee, and used a seven-step methodology to develop and test a digital tool for industry implementation. The developed tariff and billing tool proved to achieve the following outcomes:

(*i*) ISO/IEC 27001.2022 compliance

(*ii*) alignment with ISO 9001.2015 documentation management principles and procedures that streamline the tasks of tariff negotiations, tariff file reviews and uploads, as well as tariff tracking and auditing

(*iii*) accountability, transparency and enhanced engagement for sustainable scheme and healthcare professional integration within a digital platform

(*iv*) alignment with King V governance principles, via harnessing digitisation for refined practice for enhanced decision-making, risk management and long-term value creation.

Conclusion. The developed tariff and billing digital workflow passed the ISO/IEC 27001.2022 standards. It allowed for faster resolution of billing and tariff annual updates and disputes, thereby addressing the needs of key stakeholders by offering a consolidated integrated system that automates tariff updates and safely houses historical and current records of changes via a detailed, real-time and personalised report.

Keywords: digital health

Longaevitas Health: A doctor-first AI operating system to scale preventive care and longitudinal health journeys in South Africa

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Background. Primary care is the highest leverage point for improving population health, yet clinicians face limited time, administrative burden, fragmented patient data and inconsistent follow-up. Preventable chronic disease therefore consumes consultations and resources, keeping primary care trapped in reactive disease management rather than proactive health promotion. Artificial intelligence (AI)-enabled tools now create a timely opportunity to improve productivity and decision support, but only if they are integrated safely, governed appropriately and embedded into practical, clinician-led workflows that support early intervention and risk reduction.

Summary. We present Longaevitas Health, a doctor-first digital health platform designed as an operating system for preventive care, risk communication and longitudinal health planning. The platform integrates key clinical and lifestyle data streams – laboratory biomarkers, vitals, body composition, wearable-derived metrics and targeted genomics, when clinically indicated – into a unified clinician dashboard to support risk stratification and trajectory modelling over time. An embedded Longevity Plan Builder allows doctors to convert insights into structured, evidence-based targets, monitoring intervals, and follow-up pathways that can be rapidly personalised and shared. A companion patient app enables execution through clear goals, reminders, progress dashboards and longitudinal tracking. Beyond data aggregation, Longaevitas Health embeds guideline-based clinician education and practical playbooks (e.g. insulin resistance and weight management, cholesterol management, sleep optimisation, cardiometabolic risk reduction), and includes an interactive clinical support assistant that helps clinicians to generate structured, patient-specific non-pharmacological guidance (diet, activity, sleep, behaviour change) and monitoring frameworks in minutes – improving productivity by equipping clinical judgement with actionable plans. The model is modular, and practices can start with baseline inputs (standard bloods and vitals) and progressively add additional modalities as available, enabling feasible adoption across diverse practice environments. It allows for all data gained through testing to be used positively to try and help improve outcomes.

Conclusion. Integrated data and AI-driven workflow support can help shift primary care from episodic encounters to measurable longitudinal journeys, strengthening shared risk understanding for both doctor and patient, standardising follow-up and enabling earlier intervention to change health trajectories before disease becomes entrenched.

Keywords: digital health, artificial intelligence, preventive care, clinical decision support, cardiometabolic risk, patient engagement

Health identity theft and fraud in the digital era: Emerging threats and solutions

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Background. As healthcare rapidly digitises through electronic health records (EHRs) and interconnected systems, this enhances patient care, but also introduces new vulnerabilities. Health identity theft and fraud are growing threats, impacting financial stability, patient safety and public trust. This study focuses on analysing these risks and evaluating adaptive defenses.

Research problem. Despite advancements in digital health infrastructure, vulnerabilities such as data breaches and unauthorised access remain prevalent. Traditional security measures often fall short against evolving cyber threats targeting sensitive health data. This highlights the need for advanced, data-driven detection and prevention techniques.

Research question. How can adaptive, multi-layered cybersecurity strategies reduce health identity theft and fraud in modern digital healthcare environments?

Hypothesis. The hypothesis is that focusing on advanced cybersecurity measures, particularly workforce training and machine learning-based anomaly detection, significantly reduces the likelihood and impact of health identity theft and fraud.

Objective. To identify and evaluate effective cybersecurity solutions that enhance data security and minimise vulnerabilities.

Methods. This study employs a qualitative analysis of existing literature, cybersecurity reports and case studies to explore current threats and the effectiveness of emerging technologies.

Results. The study emphasises that workforce training and machine learning for anomaly detection significantly strengthen cybersecurity. These approaches enable early threat identification and robust defenses against identity fraud.

Conclusion. Focusing on workforce training and machine learning provides a practical pathway to mitigate health identity theft and fraud. Future work will explore blockchain and biometrics for even more robust defenses. Additionally, the survey aspect will be integrated to gather valuable insights into current challenges and solutions.

Keywords: health identity theft, healthcare, identity fraud, cybersecurity, machine learning

Theme 2. Innovations driving equity in healthcare

The case for personalised medicine in epilepsy in South Africa: Bridging the treatment gap with genetic testing and digital health

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Background. South Africa (SA) bears a significant burden of epilepsy, with a treatment gap >70% in rural regions. While high-income countries have revolutionised management through genetic precision medicine and digital health, these innovations remain largely inaccessible in resource-limited African settings, exacerbating health inequities. A critical question is whether a personalised care model is feasible and justifiable in this context.

Summary. This review synthesises recent pilot evidence from SA to propose an actionable, equity-focused implementation framework. Local studies demonstrate that targeted genetic testing achieves diagnostic yields of 17 - 27% in paediatric epilepsy cohorts, with >60% of solved cases receiving directly actionable results that alter clinical management, such as avoiding contraindicated drugs or initiating targeted dietary therapy. Concurrently, mobile health (mHealth) technologies objectively uncover severe, previously missed comorbidities, such as sleep disruption, and provide more accurate seizure documentation than clinical recall. We integrate this evidence to present a tiered, resource-conscious pathway. Its core components are: (*i*) a 'Think-Genetics' clinical triage tool for primary healthcare workers to identify high-yield patients; (*ii*) a staged diagnostic strategy starting with affordable, curated gene panels; and (*iii*) the integration of contextually adapted mHealth for enhanced monitoring. The framework explicitly addresses barriers of cost, stigma and infrastructure through local capacity building, community engagement and advocacy for sustainable financing.

Conclusion. Personalised medicine for epilepsy is not a distant luxury, but a necessary strategy to address systemic inequities in SA. A pragmatic, phased approach that combines precision diagnostics with digital tools can transform care, end protracted diagnostic odysseys and improve outcomes. Successful implementation requires a commitment to building local genomic and digital capacity, ensuring that these innovations drive equitable access rather than deepen existing disparities.

Keywords: precision medicine, epilepsy, health equity, genetic testing, digital health, South Africa

Perceptions and attitudes towards artificial intelligence among trainee and qualified radiologists at selected South African training hospitals

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Background. Artificial intelligence (AI) is rapidly transforming diagnostic radiology globally, offering potential to enhance workflow efficiency, diagnostic accuracy and patient outcomes. However, successful integration depends not only on technological advancement but also on acceptance, understanding and attitudes among radiologists. In South Africa (SA), limited data exist on how trainee and qualified radiologists perceive AI and its role in clinical practice, training and decision-making.

Objectives. To investigate the perceptions, attitudes and readiness of radiology trainees and qualified radiologists towards AI adoption in clinical practice, and to identify perceived barriers and facilitators influencing its integration into SA radiology training hospitals.

Methods. A cross-sectional survey was conducted among radiology trainees and qualified radiologists across multiple SA academic training hospitals. A structured questionnaire assessed demographic information, familiarity with AI applications, perceived benefits and risks, willingness to adopt AI, and perceived impact on clinical decision-making and workflow. Quantitative data were analysed using descriptive and inferential statistics, and thematic analysis was applied to open-ended responses.

Results. Preliminary findings indicate high awareness of AI among both trainees and consultants, with a majority recognising its potential to improve diagnostic accuracy and efficiency. Trainees reported greater optimism regarding AI-assisted learning and workflow integration, whereas qualified radiologists expressed cautious optimism, highlighting concerns around accountability, ethical considerations and potential impact on clinical judgement. Barriers to adoption included limited access to AI tools, inadequate training and uncertainties regarding medicolegal responsibilities. Opportunities identified included AI-supported education, triage of imaging workload and enhancement of clinical decision support systems.

Conclusion. Radiologists in SA training hospitals demonstrate a generally positive attitude towards AI, coupled with cautious awareness of ethical, legal and practical challenges. Findings suggest that structured AI education and pilot integration programmes could facilitate acceptance and responsible adoption. This study highlights the importance of aligning technological innovation with human factors to transform diagnostic radiology safely and effectively in the SA context.

Keywords: artificial intelligence, radiology, trainee perceptions, clinical adoption, health innovation, South Africa

Theme 3. General clinical innovations

Opportunities to expand delivery of prehospital tranexamic acid to bleeding trauma patients – findings from a prospective, multi-centre trauma study

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Background. Haemorrhage is the leading cause of preventable injury-related deaths. Prehospital emergency care constitutes the first critical link in the trauma care continuum, offering the potential to mitigate morbidity and mortality through timely, life-saving

interventions. Tranexamic acid (TXA) has demonstrated a 38% all-cause mortality reduction when administered early to patients with severe haemorrhagic shock in South Africa (SA). Prehospital providers with advanced life support (ALS) or equivalent training can administer prehospital TXA. This study aims to describe the utilisation of TXA in the prehospital setting in the Western Cape Province of SA.

Methods. The Epidemiology and Outcomes of Prolonged Trauma Care (EpiC) study is a prospective, multi-centre trauma study in the Western Cape. Data on patient and injury characteristics are collected, along with prehospital and hospital treatments. Patients experiencing traumatic haemorrhage and transported by emergency medical services (EMS) from the scene were eligible for this secondary analysis. Patient, injury, EMS provider level and EMS interventions were descriptively analysed. A subset of patients eligible to receive TXA and presenting with severe shock was also analysed descriptively.

Results. The EpiC study identified 4 094 patients transported by EMS and at risk of haemorrhage between August 2021 and December 2024. The median time to EMS arrival was 0.93 hours. Among the entire cohort, only 2.8% (n=116) received prehospital TXA. Among patients with severe risk of shock who were managed by an advanced prehospital provider (n=161), only 19% (n=30) received TXA. Intermediate prehospital providers, who cannot administer TXA under current regulations, managed 58% (n=285) of these patients, and delivered other life-saving circulatory interventions to 79% of these (n=225).

Conclusion. Only a small percentage of eligible haemorrhagic-risk patients received TXA prehospitally, despite its established early mortality benefit. Intermediate prehospital providers, who deliver many lifesaving interventions, manage a majority of these eligible patients; however, the current scope-of-practice restriction prevents them from administering TXA. Extending TXA administration to intermediate prehospital providers in SA may be feasible.

Keywords: tranexamic acid, emergency medical services, haemorrhage, prehospital providers, traumatic injury

The incapacity and legal status assessment algorithm (ILSAA): An innovative and valuable instrument to assess mental healthcare states

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Background. South Africa (SA) is experiencing a significant mental health crisis, characterised by an extensive treatment gap, and high prevalence rates of mental disorders. Epidemiological data indicate that between 75% and 92% of individuals with mental health conditions in SA do not receive adequate treatment. This gap is concerning given that approximately one-third of the population is affected by mental illnesses. Mental health services in SA are predominantly delivered through primary healthcare clinics by general practitioners.

Summary. The Mental Health Care Act 17 of 2002 (MHCA) legislates the provision of inpatient mental healthcare services, categorising care delivery within voluntary, assisted, or involuntary legal frameworks. These frameworks emphasise minimal infringement upon the rights to freedom of movement, privacy and dignity of mental healthcare users. Determining the appropriate legal status for individual patients presents considerable legal and ethical challenges. Given that the majority of these determinations are made by non-specialist practitioners, and considering the specific procedural and clinical prerequisites delineated by the MHCA for each legal status, there exists a critical need for an empirically validated and reliable instrument to guide practitioners in these assessments. To address this need, the incapacity and legal status assessment algorithm (ILSAA) was developed and subsequently subjected to empirical testing.

Conclusion. An empirical validation study has demonstrated that the ILSAA is both a valid and reliable tool for assessing the legal status of potential mental healthcare users. The algorithm accurately predicted the appropriate legal care state with an overall accuracy >86% and specificity of 89%. Specificity values ranged from 89% to 96%, while sensitivity values ranged between 82% and 89%, except for a lower sensitivity of 59% in the decline category. Internal consistency reliability, assessed via Cronbach's alpha, yielded a coefficient of 0.998, indicating excellent reliability. Inter-rater reliability testing revealed a moderate degree of agreement among assessors (Krippendorff's alpha = 0.66). The ILSAA constitutes an innovative and valuable instrument designed to assist non-specialist practitioners in the objective assessment of mental healthcare users' legal status.

Theme 4. General health research

Occupational therapy for children with autism spectrum disorder: Synthesising global and local evidence

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Background. Autism spectrum disorder (ASD) affects ~1 - 2% of South Africa (SA)'s population, with >270 000 individuals potentially living with ASD. Despite increasing recognition, significant gaps exist in culturally appropriate assessment tools, intervention services and transition support. Occupational therapy is among the top interventions for autistic children globally and in SA, addressing sensory, motor, social participation and functional needs. Recent Level 1 evidence from randomised controlled trials demonstrates that Ayres Sensory Integration significantly improves individualised goals, daily living skills, self-care and socialisation. International research reveals elevated rates of depression, anxiety and suicidality among autistic populations, necessitating mental health-focused interventions.

Objectives. To synthesise local and international evidence on occupational therapy assessment and intervention practices for children with ASD, examining assessment measures, primary caregiver experiences, the effectiveness of evidence-based interventions, mental health considerations and transition challenges into adulthood and employment.

Methods. Multiple SA studies have employed cross-sectional surveys, qualitative phenomenological designs, scoping reviews and mixed-methods approaches, exploring perspectives from occupational therapy practitioners nationwide, parents, healthcare professionals and young adults with ASD, across private practice, public health and special needs education sectors. A commissioned rapid review by the Occupational Therapy Association of SA synthesised global evidence to inform policy.

Results. SA practice paralleled international patterns: informal play-based assessment demonstrated superior clinical utility compared with standardised testing, with Ayres Sensory Integration emerging as the primary intervention framework, supplemented by developmental and DIRFloortime approaches. International systematic reviews confirm that play-based occupational therapy,

sensory integration therapy and technology-assisted interventions improve attention, self-regulation, playfulness and social participation. Current international practice guidelines emphasise neurodiversity-affirming approaches, self-determination, mental health promotion and family-centred planning. Critical service gaps include: cultural and linguistic sensitivity in assessment tools; primary caregiver quality-of-life support; and vocational rehabilitation services, with research showing more successful employment when occupational therapy addresses vocational skills, job coaching and workplace adaptations.
Conclusions. SA occupational therapy practice aligns with international evidence-based standards, while also revealing contextual challenges that require local adaptation. Occupational therapy demonstrates emerging robust evidence for children with ASD, positioning occupational therapists as essential members of interdisciplinary autism care teams.

Exploring the lived experiences of the multidisciplinary team on the management of obesity in children with disabilities

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Background. Childhood obesity is a public health concern. Children with disabilities (CWDs) are vulnerable to obesity owing to limited physical activity, medication and poor diet. Management of obesity in this population is not prioritised. It is crucial to understand the lived experiences of the multidisciplinary team (MDT) when managing obesity in children with disabilities.
Objectives. To explore the lived experiences of the MDT on the management of obesity in CWDs.
Methods. A descriptive phenomenological approach was taken, and purposive sampling was used to recruit 13 healthcare professionals and two caregivers. Structured interviews were conducted, data were transcribed and analysed thematically, and themes were developed.
Results. Six themes emerged from the data: MDT roles identified; MDT perceptions on managing obesity in CWDs; MDT co-ordination; barriers faced by the MDT; impact of cultural and socioeconomic factors; and recommendations for improving management of obesity in CWDs.
Conclusion. This study contributes to understanding the challenges faced by the MDT in managing obesity in CWD, and makes recommendations that can be implemented to overcome these challenges.

Pragmatic guidelines for supporting parents of children with autism spectrum disorder: Integrating evidence into workable solutions

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Background. Parents of children with autism spectrum disorder (ASD) frequently encounter significant emotional distress, uncertainty and stigma during the early stages of recognising developmental differences and seeking support. A synthesis of three bodies of work – a scoping review, an analysis of caregiver-focused interventions, and practitioner-based recommendations – reveals critical gaps in support for primary caregivers, particularly within sub-Saharan Africa. Despite the influence of caregiver wellbeing on child developmental outcomes, global research and intervention models remain largely child-centred, with less attention to the mental, emotional, physical and social needs of caregivers. The literature highlights the importance of early, accurate education; sensitive, validating communication from medical professionals; and the timely mobilisation of multidisciplinary and community-based resources.
Methods. The three studies posed research questions around parents' experiences and coping strategies in terms of ASD, what interventions are globally offered for parents of children with ASD, and what interventions are set in place nationally to address the needs of this population. Study designs included qualitative exploratory approaches to harness parents' voices, a synthesis of the literature via a scoping review, and a national survey documenting services already established.
Results. The results and recommendations of the three studies provide pragmatic guidelines for medical professionals when addressing parents' needs. Effective caregiver-centred interventions include behaviour management training, communication and daily living support, peer-based networks, and skills that enhance resilience and reduce stress. Pertaining to and of specific relevance to medical practitioners, these findings underscore the need to adopt a holistic, family-centred approach that recognises caregivers as 'clients' in their own right. This includes listening attentively to early parental concerns, providing clear and honest guidance, promoting caregiver health and coping strategies, and facilitating access to specialised, appropriate and relevant services.
Conclusion. Strengthening the role of medical practitioners in caregiver support has the potential to improve family wellbeing and enhance long-term outcomes for children with ASD.
Keywords: parents of children with ASD, quality of life, guidelines to support parents of children with ASD

Prevalence of metabolic syndrome and associated risk factors among public servants in the Free State province, South Africa

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Background. Metabolic syndrome (MetS) is a major public health concern owing to its strong association with cardiovascular disease and type 2 diabetes mellitus. Limited data are available on the prevalence of MetS risk factors among public servants in South Africa (SA), particularly in the Free State Province.
Objective. To determine the prevalence and distribution of MetS risk factors among public servants in the Free State Province.
Methods. A cross-sectional study was conducted among 201 office-based public servants aged 18 - 65 years. Anthropometric measurements, blood pressure, fasting blood glucose and lipid profiles were assessed using standardised procedures. Descriptive statistics and χ^2 tests were used to analyse the data and examine associations between demographic variables and MetS risk factors.
Results. The study population consisted of 62% women and 38% men, with a mean (standard deviation) age of 40 (11) years. A high prevalence of MetS risk factors was observed, including central obesity (75%), low high-density lipoprotein cholesterol (52%), elevated triglycerides (33%), elevated fasting blood glucose (9%) and hypertension. Females were more likely to present with very high waist circumference, while males showed higher rates of elevated triglycerides and prehypertension. Increasing age was significantly associated with worsening lipid profiles, abdominal obesity and hypertension ($p<0.05$).
Conclusion. Public servants in the Free State Province demonstrate

a substantial burden of metabolic syndrome risk factors, particularly central obesity and dyslipidaemia. These findings highlight the urgent need for workplace-based screening programmes, lifestyle interventions and health promotion strategies to reduce cardiometabolic risk in this population.

Keywords: metabolic syndrome, cardiovascular risk, workplace health, public servants, South Africa

Perceptions and behaviours of patients with type 2 diabetes mellitus regarding physical activity at selected clinics in Manzini Region, Eswatini

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Background. Despite several interventions that have been implemented in Eswatini to raise awareness on diabetes, such as dedicating the whole month of November to the condition, diabetes prevalence remains high.

Objective. To explore and describe perceptions of patients with type 2 diabetes mellitus (T2DM) with regard to daily physical activities at selected clinics in Manzini region, Eswatini.

Hypotheses. The first hypothesis was that 'patients with T2DM in Manzini Region, Eswatini, do not engage in physical activities'. The second was that 'patients with T2DM in Manzini Region, Eswatini, do not know the benefits and importance of daily physical activity' when they are diagnosed.

Methods. The study adopted a quantitative and descriptive research design. Non-probability sampling and purposive sampling strategies were adopted. Sample size was calculated using Raosoft, and data were collected using self-administered questionnaires. SPSS version 29 was used to analyse data.

Results. Study findings revealed that 99.7% of patients with T2DM in the Manzini region of Eswatini have knowledge and understanding of what physical activity is; however, 82.4% of the patients do not engage in daily physical activity, and 83.5% of the patients revealed that they did not enjoy doing physical activities.

Recommendations. Recommendations of the study are: daily physical activity for those who are inactive; encouraging patients to maintain 150 minutes of exercise per week; and motivating patients to join Shukuma Eswatini. Physical activities should be made enjoyable and fun by encouraging patients to listen to good music, which will keep them motivated while exercising.

Conclusion. The researchers emphasise that healthcare professionals should create a good relationship with patients, and provide detailed health education to help improve the physical activity of patients.

Keywords: physical activity, type 2 diabetes mellitus, perceptions, behaviours, patients, health education programmes

Epidemiology of traumatic brain injuries in the Western Cape Province, South Africa

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Background. Traumatic brain injury (TBI) is a leading cause of injury-related death and disability worldwide. In South Africa (SA), TBI is largely driven by interpersonal violence (IPV) and road traffic accidents (RTAs), which have ranked as top causes of mortality for over 25 years, yet local data on TBI burden remain limited.

Methods. A secondary analysis of patients from the Epidemiology and Outcomes of Prolonged Trauma Care (EpiC) study, a prospective multicentre injury-to-outcome study in the Western Cape Province, SA, was performed to describe TBI epidemiology, care pathways and outcomes. EpiC prospectively enrols patients with acute moderate to severe traumatic injury across 10 study sites in the Western Cape, encompassing primary- to tertiary-level hospitals, emergency medical services (EMS) and forensic pathology services. Patients with head injury from 2022 - 2024 were eligible for inclusion. Head injury was defined as a head abbreviated injury score (AIS) >1, and TBI as a head AIS >2. Lowest Glasgow coma scale (GCS) within 24 hours of injury categorised TBI as mild (GCS 13 - 15), moderate (GCS 9 - 12), or severe (GCS 3 - 8). Logistic regression was used to assess odds of poor neurological recovery (measured using Glasgow outcomes scored) by severity.

Results. Of 16 869 enrolled patients, 4 815 had a documented head injury. The cohort was predominantly male (83.8%), with a median (interquartile range) age of 32.0 (26.1 - 39.6) years. Among head injuries, 77.1% were IPV-related, 62.3% resulted from blunt trauma and 18.4% were RTA-related. A total of 2 277 head injuries met TBI criteria: 478 (21.0%) severe, 298 (13.1%) moderate and 1 501 (65.9%) mild. Severe TBI cases were more frequently transported by EMS from the scene (*n*=322, 67.4%) and to a tertiary-level hospital (*n*=176, 36.8%). All-cause mortality increased with TBI severity (54.8% severe, 6.7% moderate, 1.5% mild). Severe TBI was associated with poor recovery at discharge compared with no TBI (adjusted odds ratio 4.1, 95% confidence interval 1.9 - 8.9).

Conclusion. Within this trauma cohort, TBI is common, and increasing severity was associated with higher mortality and worse neurological recovery. These findings highlight the role of IPV, RTAs and TBI severity in shaping outcomes and support, using integrated trauma registry data to guide targeted system-level improvements in trauma care and resource allocation.

Self-evaluated knowledge, attitudes and practices of primary healthcare medical practitioners towards bipolar disorder in South Africa: Preliminary findings

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Background. Bipolar disorder represents a chronic mental health condition linked to substantial morbidity and strain on healthcare systems globally. In South Africa (SA), primary healthcare (PHC) practitioners often act as the first point of contact for mental health service users, driven by restricted access to specialist psychiatric services. Despite the existence of national treatment and referral

guidelines, challenges such as delayed diagnosis and inadequate treatment remain common. Notably, there is a scarcity of data on the knowledge, attitudes and practices (KAP) of PHC practitioners specific to bipolar disorder within the SA context.

Objective. To characterise the self-perceived KAP of medical practitioners in PHC settings concerning diagnosis, management and referral of patients with bipolar disorder.

Methods. This cross-sectional descriptive study employed a self-developed, self-administered online questionnaire covering demographic details, knowledge levels, attitudes and practices related to bipolar disorder. The tool was crafted based on the Standard Treatment Guidelines and Essential Medicines List (STG/EML). Recruitment via convenience and snowball sampling targeted Gauteng Province-based PHC practitioners who had managed bipolar patients in the preceding year. Data analysis used descriptive statistics, with exploratory assessments of associations between KAP variables. Preliminary insights from 62 respondents are reported here.

Results. The sample skewed female (77.4%, *n*=48), with most aged between 25 and 34 years (74.2%, *n*=46). General practitioners (45.9%, *n*=28) dominated the group, followed by intern doctors (36.1%, *n*=22), alongside government medical officers and community service doctors. Marked variability emerged in self-assessed knowledge, confidence and practices. Guideline adherence was low. Only 18% strongly agreed and 29% agreed to routinely aligning acute manic episode treatments with STG/EML recommendations. Participants reported hurdles in diagnosis, management and referrals, exacerbated by resource shortages – 12 strongly agreed and 19 agreed on limited mental health access.

Conclusion. These early findings signal potential deficiencies in practitioner training and broader system support, especially in public PHC facilities, where most participants operate. Final analyses await full sample attainment. The observed inconsistencies in KAP, guideline use and resource perceptions highlight an urgent need for tailored educational programmes, enhanced training and systemic interventions to bolster bipolar disorder management at the PHC level in SA.

ORAL PRESENTATIONS

Theme 1. Digital Health Innovations

Evaluating open-source public key infrastructure platforms for secure digital healthcare in South Africa

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Background. South Africa (SA)'s healthcare system is rapidly adopting digital technologies such as electronic health records, telemedicine platforms, laboratory systems and connected medical devices. While these technologies improve efficiency and access to care, they also increase cybersecurity risks that may disrupt services and compromise patient data.

Research problem. There is limited structured evaluation of whether widely used open-source public key infrastructure (PKI) platforms adequately meet the specific security and operational requirements of healthcare environments in SA.

Research question. To what extent do commonly used open-source PKI platforms support healthcare-relevant security requirements?

Hypothesis. Although most open-source PKI platforms provide essential security functions, they may not fully address healthcare-specific needs related to automation, auditability, certificate life-cycle management and operational reliability.

Objective. To evaluate four widely used open-source PKI platforms using a structured scoring model to determine how well they support healthcare-relevant security functions.

Methods. A structured evaluation framework was developed using a scoring model. Each platform was assessed against criteria including identity verification, certificate issuance and renewal, revocation services, audit logging, automation capabilities and service reliability. Comparative analysis was conducted based on these criteria.

Results. The evaluation determined that while essential PKI functions are generally supported, important gaps remain. These include limited automation for certificate life-cycle management, inconsistent audit logging that complicates compliance verification, and inadequate certificate status validation tools. In healthcare settings, such weaknesses may cause service interruptions, restrict access to patient records and undermine trust in digital systems and medical devices.

Conclusion. PKI should be treated as critical digital infrastructure within SA's health sector. Strengthening governance through clear certificate management policies, regular auditing, automation, risk-based controls and improved vendor oversight can enhance system reliability, protect patient information and support secure digital healthcare delivery.

Keywords: public key infrastructure, healthcare cybersecurity, digital health systems, certificate life-cycle management, health information security

Theme 2. Innovations Driving Equity in Healthcare

Mapping social innovation in South Africa's health ecosystem: Enablers, barriers and pathways to scale

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Background. Social innovation is increasingly recognised as a critical mechanism for transforming healthcare systems, particularly in contexts characterised by inequality, resource constraints and high disease burdens. In South Africa (SA), social innovations in health encompass community-driven models, service delivery innovations, digital health platforms, and novel financing and governance approaches that seek to elevate access, quality and equity in care. However, the extent to which the broader health innovation ecosystem effectively enables these innovations to emerge, scale and sustain impact remains uneven and fragmented. This study reviews the state of social innovation within SA's health ecosystem in 2025, identifying key strengths, systemic gaps and priority actions to support inclusive, collaborative and scalable health innovation.

Methods. A mixed-methods ecosystem review was conducted, guided by the International Development Innovation Alliance (IDIA) framework and the World Health Organization's Health

Systems Building Blocks. Desktop analysis of peer-reviewed literature, policy documents and grey literature was complemented by 38 semi-structured key informant interviews with stakeholders across government, academia, healthcare providers, innovators, funders and intermediaries. Data were thematically analysed across the nine IDIA ecosystem goals and synthesised through stakeholder validation and international benchmarking against the UK, Kenya and India.

Results. The findings indicate a relatively mature yet fragmented health innovation ecosystem. Key strengths include strong public-private research infrastructure, expanding digital health capabilities and growing policy commitment to innovation as a driver of health system transformation. Persistent barriers include fragmented and risk-averse financing, regulatory complexity, weak pathways from pilot to scale, limited co-ordination across institutions and inequitable participation of township and rural innovators. While many social and digital health innovations demonstrate proof-of-concept impact, systemic constraints continue to limit sustainable scaling and integration into public health systems, particularly in the context of SA's National Health Insurance reforms.

Conclusion. Advancing social innovation as a lever for transforming healthcare in SA requires co-ordinated action across policy alignment, finance, human capital development and market-shaping mechanisms. Embedding social and digital innovations within health system reform processes offers a critical opportunity to elevate equity, resilience and collective impact in healthcare delivery.

Where healthcare supply and demand meet: Actuarial insights into evolving dynamics in South Africa

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The interaction between the demand for healthcare and the supply of healthcare goods and services in South Africa (SA) is uniquely complex. Unlike conventional economic markets that tend towards equilibrium, healthcare demand is effectively unlimited, while supply is inherently constrained. Within the SA medical scheme environment, ageing demographics and a rising burden of disease are shifting utilisation patterns, while affordability pressures continue to shape member purchasing behaviour. The private healthcare sector has expanded in response to increasing demand over the past two decades.

Using risk-adjusted and artificial intelligence methodologies, drawing on one of the largest data sets of private healthcare utilisation and provider activity in the country since 2008, this analysis examines the distribution and alignment of healthcare demand and supply across the age continuum. For neonates, children, youth and young adults, middle and older-age adults as well as the elderly, the growing burden of disease in each cohort is compared with the supply of beds and health professionals. We quantify changing care needs, market responses, and where alignment is achieved. While greater supply often correlates with higher utilisation, the findings reveal opportunities to strengthen quality-adjusted outcomes.

The results show the imperative for medical schemes to grow by attracting and retaining younger, healthier members so that critical risk cross-subsidies can sustain long-term funding. Beyond membership dynamics, the findings point to meaningful opportunities for innovation in care communities and care delivery models to better harmonise supply and demand in the SA context.

Therapeutic outcomes, attitudes and perceptions of insulin delivery mechanisms in South Africa

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Background. Insulin delivery using pens or vials with syringes (v/s) remains common in the public sector. However, real-world patient preferences and therapeutic outcomes in South Africa (SA) are underexplored. This is important for procurement decisions, treatment adherence and equitable diabetes care. This study aimed to evaluate therapeutic outcomes, perceptions and attitudes of people living with diabetes mellitus (DM) using insulin pens, insulin v/s or both.

Methods. A 1-month, cross-sectional, mixed-methods study was conducted at a tertiary hospital in the Tshwane District. Purposive sampling was used. Inclusion criteria included patients aged 7 - 75 years, diagnosed with type 1 DM (T1DM) and insulin-dependent type 2 DM (T2DM), using insulin pens, insulin v/s or both delivery mechanisms, who provided informed consent and assent. Ethical approval for this study was granted by relevant committees. A total of 130 patients were approached, of whom 63 met the inclusion criteria, and had complete surveys and patient files for analysis. Quantitative and qualitative data were collected, using patient surveys and file record reviews. Data were analysed using descriptive statistics, Fisher's exact test and content analysis.

Results. In this sample, 61% of participants were female, and 62% were T1DM. The mean (standard deviation) HbA1c level was 10.5% (2.4), mean insulin injection frequency 4 (1.2) times per day and mean total insulin dose of 69.2 (29.3) U. No statistical significance in HbA1c levels was observed between delivery methods. Both delivery methods for 6 - 12 months were used simultaneously by 54% of participants. In this category, the majority had self-reported hypo/hyperglycaemia symptoms that were statistically significant ($p<0.05$) between the methods. Overall, insulin pens were preferred (87%) over v/s for satisfaction, pain and perceived dosing. Most participants (92%) would use pens if available in public healthcare. Notably, the young (aged 12 - 19 years) and elderly (>50 years) were often offered both methods or v/s alone. Needle supply constraints and unsafe sharps disposal were common.

Conclusion. Our findings demonstrate strong patient preference for insulin pens. Vulnerable age groups often have limited pen availability. Aligning insulin procurement and dispensing with patient-centred delivery methods may improve treatment adherence, safety and health equity in the SA public healthcare sector.

Theme 3. General Clinical Innovations

Optimising clinical governance and risk management in a resource-limited hospital

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Background. District hospitals in resource-constrained settings face significant challenges, including high patient volumes, limited staff and restricted infrastructure. Effective clinical governance and

risk management are essential in these contexts to improve patient outcomes, reduce medical errors, and optimise the use of scarce resources.

Objective. To describe an innovative, family physician-led intervention designed to streamline admissions, prioritise care and enhance clinical oversight in a South African district hospital.

Methods. A structured protocol was implemented to establish a designated high-care unit and admissions ward. Upon arrival, all newly admitted patients were assessed by a family physician, allowing timely identification and management of critically ill patients. Family physicians were allocated to focus primarily on high-risk patients requiring immediate intervention, while routine care was managed through co-ordinated team-based approaches. Clinical oversight, patient outcomes and operational efficiency were monitored throughout the intervention period.

Results. The model improved early recognition and management of severely ill patients, leading to measurable reductions in medical errors, morbidity and mortality. By centralising the expertise of family physicians, the hospital optimised care delivery, ensuring that limited clinical resources were allocated efficiently. The structured approach also strengthened communication among healthcare teams, enhanced adherence to clinical protocols and facilitated more effective escalation of care when needed.

Conclusion. This intervention demonstrates the critical role of family physicians in clinical governance and risk management within resource-limited settings. By strategically deploying physician expertise and implementing structured admission and care pathways, hospitals can improve patient safety, operational efficiency and overall quality of care. The model provides a scalable framework that can be adapted to other district hospitals facing similar resource constraints, highlighting the importance of leadership, co-ordination and evidence-based approaches to optimise health outcomes in challenging healthcare environments.

Sleep as a key determinant of health: Insights from a large-scale behavioural and clinical data analysis

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Background. Sleep is increasingly recognised as a critical determinant of overall health and wellbeing. Discovery Limited's study, 'The sleep factor: A data-led blueprint for better health', utilises a large-scale dataset comprising anonymised behavioural, clinical and claims data, with >47 million nights of sleep records from ~105 000 adults over 3 years. The research examined how sleep duration, regularity and quality relate to physical, mental and safety-related outcomes.

Results. The study analysed sleep health across three key parameters: duration (total amount of sleep per night), regularity (consistency of bedtime and wake time) and quality (proportion of rapid eye movement and deep sleep). The analysis demonstrated that individuals who consistently slept <7 hours per night or exhibited irregular sleep patterns experienced a 22% higher risk of mortality compared with those who met recommended sleep parameters. Among those sleeping <5 hours per night, risks were markedly elevated, with a 65% higher likelihood of developing diabetes, 41% higher risk of obesity, 33% higher risk of coronary heart disease and 20% higher risk of moderate-to-severe depressive symptoms when compared with those sleeping 7 - 8 hours per night. Conversely, improvements in sleep correspond with measurable reductions of these risks (7% reduction in hospital claims and 32% reduction in motor-vehicle accidents), demonstrating sleep as a modifiable behaviour with large-scale prevention potential.

Conclusion. The findings position sleep as a fundamental pillar of health, equivalent in importance to other lifestyle modifications. From a clinical neuroscience and population health management perspective, sleep holds a dual role, as a biomarker of chronic and mental health condition risk and as a modifiable behaviour to be targeted through intervention. For clinicians and health systems, these findings underscore the value of integrating sleep metrics into risk stratification frameworks and health intervention design, further impacting longevity, health span and safety outcomes. Future research should further explore the link between sleep and behavioural health, and develop scalable, evidence-based models for sleep health promotion.

Keywords: sleep health, applied neuroscience, preventive medicine, behavioural risk factors, data modelling, healthcare innovation

An exploration of undergraduate student perspectives of workplace-based assessments in a rural longitudinal integrated clerkship

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Background. Workplace-based assessment (WBA) supports the development of clinical competence through real-time observation and feedback. Its role in rural undergraduate training, where contextually relevant skills are critical, is not well described in South Africa.

Objective. To explore final-year medical students' perceptions of WBA within a rural longitudinal integrated clerkship (LIC), and consider implications for clinical training and health system strengthening.

Methods. A qualitative study within an interpretivist paradigm was conducted among graduates of Stellenbosch University's rural LIC programme. Semi-structured interviews (*n*=10) explored experiences of WBA, including mini-clinical evaluation exercises and direct observation of procedural skills. Data were analysed using inductive thematic analysis.

Results. Students perceived WBA as an authentic, low-stress approach that enhanced clinical preparedness, confidence and reflective learning. Four themes emerged: (*i*) the pivotal role of assessors in shaping learning experiences; (*ii*) WBA as both an assessment and a transformative learning tool; (*iii*) the importance of timely, constructive feedback; and (*iv*) expanded learning opportunities through longitudinal, experiential engagement. Reported challenges included time constraints, variability in assessor engagement, perceived subjectivity, and contextual barriers such as language and staffing limitations.

Conclusion. WBA in rural LIC settings is valued for promoting student-centred, practice-ready learning. However, its effectiveness depends on consistent implementation, faculty development and adequate resourcing. Strengthening WBA may enhance the preparation of graduates for district health services and contribute to health system strengthening in underserved settings.

Keywords: workplace-based assessment, rural health, medical education, longitudinal integrated clerkship, student perceptions

Theme 4. General Health Research

Predictors of perceived stress among early-career medical doctors in KwaZulu-Natal: A cross-sectional study

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Background. Multiple factors associated with early-career medical doctors' stress levels and consequent mental health have been widely documented. Poor mental health among medical doctors is associated with deleterious outcomes, including poor work performance, lapses in patient care, adverse doctor-patient interactions and overall diminished quality of life for the doctor.
Objective. To identify predictors of perceived stress among early-career medical doctors in KwaZulu-Natal Province (KZN), South Africa.
Setting. Twenty-one public hospitals in the eThekwini District, KZN.
Methods. A quantitative, descriptive cross-sectional study was performed. Respondents were 170 medical doctors who completed the Perceived Stress Scale (PSS-10), which was used to measure levels of stress. Respondents also completed a biographical questionnaire.
Results. Of the 170 participants, 20% obtained high perceived stress scores on the PSS-10, 67% obtained PSS-10 scores in the moderate range, and 11% obtained low perceived stress scores. High perceived stress scores were predicted by the type of healthcare facility in which participants worked and their years of experience.
Conclusion. Moderate stress is highly prevalent among early-career medical doctors in KZN. The strongest predictors of stress were working in a community healthcare centre, which is often the first point of contact for healthcare before patients are referred to other levels of specialised care. In addition, being a more experienced early-career medical doctor was also a significant predictor of perceived stress.
Contribution. There is a paucity of research specifically examining the perceived stress levels of early-career medical doctors and their predictors. Understanding what predisposes medical doctors to stress and other mental health issues may inform effective targeted interventions.

Assessing healthcare professionals' perspectives: A knowledge and perceptions survey on South Africa's National Health Insurance

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Background. The National Health Insurance (NHI) Act (2023) in South Africa (SA) is a major health policy reform aimed at achieving universal health coverage (UHC). Healthcare professionals (HCPs) are critical stakeholders in NHI implementation, as both providers and users of the health system. This study aimed to assess HCPs' knowledge and perceptions of the NHI, to identify gaps that may affect workforce participation, service delivery and policy uptake during implementation.
Methods. A national descriptive cross-sectional survey was conducted among HCPs working in public and private sectors across all nine provinces of SA. Data were collected using a structured online questionnaire between June and September 2024. The survey assessed sociodemographic characteristics, knowledge of NHI and perceptions related to workforce distribution under the NHI. Descriptive statistics were used to describe participant characteristics and knowledge levels. Logistic regression analyses were used to identify factors associated with good knowledge of the NHI.
Results. A total of 2 394 healthcare professionals participated. Overall, 69.2% demonstrated good knowledge of the NHI (score ≥8.5/14). However, substantial gaps were identified regarding governance structures, contracting arrangements and professional autonomy. More than a quarter (26.3%) of respondents incorrectly believed that private healthcare services would cease under NHI, and over half (51.2%) believed that contracting with the NHI Fund would be compulsory. Older age (adjusted odds ratio (aOR) = 2.61, 95% confidence interval (CI) 1.15 - 5.19, *p* 0.02), being a pharmacist (aOR = 1.94, 95% CI 1.00 - 3.74, p=0.04), and working in the Free State Province (aOR = 1.58, 95% CI 1.00 - 2.51, p=0.04) were significantly associated with higher knowledge scores. Importantly, a meaningful proportion of HCPs (41.1%) expressed willingness to relocate to underserved areas, indicating potential support for strategies aimed at improving equity in service delivery.
Conclusion. While overall awareness of NHI among healthcare professionals is high, critical misconceptions persist, particularly regarding governance and operational aspects. Addressing these gaps through targeted communication, education and change management strategies will be essential to ensure a well-informed and supportive health workforce as SA advances towards UHC.
Keywords: universal health coverage, national health insurance, health reform, healthcare professionals, knowledge, perceptions

Preventable mortality after traumatic injury: Findings from an expert panel consensus review

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Background. Globally, injury ranks as the 5th leading cause of death, and is the primary cause of mortality among younger populations. An estimated 90% of injury-related deaths occur in low- and middle-income countries. South Africa's trauma-related mortality rate is higher than the African continental average (157.8 v. 139.5 per 100 000). Homicide, road traffic accidents and suicide account for most trauma-related deaths. To identify modifiable and intervenable factors contributing to trauma-related mortality, a multidisciplinary expert panel review was conducted to assess trauma death preventability.

Methods. Using data from an ongoing prospective, multicentre trauma registry – the Epidemiology of Prolonged Trauma Care (EpiC) study, which follows patients from the time of injury to final disposition, the review panel comprised of 23 multidisciplinary experts, who reviewed a cohort of trauma decedents from 2023. Patient demographics, injury characteristics, time and location of death as well as postmortem findings were descriptively analysed. Each case was categorised as preventable, non-preventable, non-preventable with potentially improved care, or indeterminate. The experts further provided recommendations for improvement to the health system, which were analysed using rapid qualitative methods.

Results. A total of 210 deaths were reviewed and discussed by the panel. A majority of deaths were due to interpersonal violence: assault (39%) and gunshot injuries (29%). Of the deaths, 70 (33%) were classified as preventable or potentially preventable. Haemorrhage (*n*=27, 39%) and multi-organ failure or sepsis (*n*=25, 36%) accounted for the largest proportion of preventable deaths. Among the 161 deaths that had contact with the health system, 100 (62.1%) occurred in an emergency centre. Top recommendations by the panel include trauma training for junior frontline staff, improved access to computed tomography imaging and operating theatres at non-tertiary facilities, direct emergency medical services transport of severely injured patients to tertiary facilities, and community initiatives to reduce interpersonal violence.

Conclusion. One-third of reviewed deaths were determined to be preventable or potentially preventable. The expert panel recommendations for training and accessibility to resources underscores the need for a multifaceted approach that engages multiple stakeholders to improve trauma care and help avert future trauma-related deaths.

Keywords: interpersonal violence, health systems improvement, expert panel review, preventability, trauma mortality

Youth adherence to pre-exposure prophylaxis and post-exposure prophylaxis: The case of Ulundi local municipality in KwaZulu-Natal Province, South Africa

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Background. HIV prevalence among youth in sub-Saharan Africa remains a significant public health concern. A study conducted in sub-Saharan Africa to explore adherence of youth to HIV preventive programmes showed that HIV prevalence increased by 3.0 million between 2000 and 2017. South Africa (SA) continues to be the epicentre of HIV prevalence, despite the implementation of multiple prevention strategies such as condom distribution, voluntary medical male circumcision, pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP). The limited impact of these interventions highlights the need to understand factors that influence adherence among SA youth.

Objective. To investigate youth adherence to PrEP and PEP in the Ulundi Local Municipality in KwaZulu-Natal Province, SA.

Method. This study adopted a quantitative research approach with descriptive design. Probability sampling was used to ensure representativeness, and random sampling was applied to select clinics from which youth participants were drawn. Data were collected through structured questionnaires. The population size needed for the study was 400. This study was approved by the ethics committee of the University of Zululand together with the Department of Health. Questionnaire formulation was guided by the health belief model.
Analysis was done using Statistical Package (SPSS) version 29.

Results. Of a total of 400 respondents to using PrEP, 20.8% (*n*=83) strongly agreed and 15.5% (*n*=62) agreed that PrEP reduces the chance of getting HIV, while 8.8% (*n*=35) were neutral. Only 1.8% (*n*=7) disagreed and 2.5% (*n*=10) strongly disagreed. A total of 50.7% (*n*=203) found the statement not applicable.

A toal of 116 youth (29%) strongly agreed with the use of PEP; 16 (4%) agreed with the use of PEP, while 34 (8.5%) were neutral about using PEP. One hundred and fifty-eight (39.5%) indicated that the question was not applicable, while 58 (14.5%) had different views on PEP usage or strongly disagreed. The percentage of the youths that disagreed was 4.5% (*n*=18).

Conclusion. This study makes a strong recommendation that healthcare professionals and nursing educators should intensify education and awareness on PrEP and PEP, ensuring that accurate information and promotional materials are widely accessible in clinics.

Keywords: HIV prevention, youth adherence, pre-exposure prophylaxis, post-exposure prophylaxis, HIV/AIDS