

SAMA INSIDER

October 2017

SA Drug Policy Week tackles effective drug policy

Investigating free
resources for SA doctors



PUBLISHED AS A SERVICE TO ALL MEMBERS OF
THE SOUTH AFRICAN MEDICAL ASSOCIATION (SAMA)

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Diane de Kock
Editor: *SAMA INSIDER*

Online resources – what do you use?

Welcome to the October edition of *SAMA Insider*. This month we introduce what we hope will become a communication platform for readers on the maze of online resources available to doctors in the form of apps, databases, programs, toll-free hotlines and online courses. Sharing information about which resources you use on a regular basis, and why, would be helpful to our readers when faced with so many choices – personal feedback is always valuable!

In his second-last message (page 4), SAMA president Prof. Dan Ncayiyana looks at “Genetic link, gamete-donor identity, surrogacy – the controversies of *in-vitro* fertilisation”, an article likely to spark some debate, which we hope you will share with us by writing a letter to the editor.

A follow-up article (page 9) by the SAMA Knowledge Management and Research Department looks at the implications of the recently launched SA Medical Device Industry Association (SAMEDI)’s Medical Device Code of Ethical Marketing and Business Practice, and encourages members to familiarise themselves with the code, its principles and guidance.

JUDASA Western Cape (page 11) has launched a “Doctors Unscripted” series of open meetings to brainstorm how junior doctors can make a difference, and Dr Lindi Shange (page 15) tackles the potentially controversial subject of an effective drug policy in SA: “We need to have the ‘difficult conversations’ to understand the issues and identify appropriate solutions.” We look forward to further articles on this subject from Dr Shange.

On page 16, SEDASA’s Dr Akhtar Hussein discusses climate change, and on page 18 Prof. Nicola Wearne reports on her research project funded by a SAMA PhD scholarship.

We look forward to receiving feedback from all our readers on this edition. Please email the editor at Dianed@hmpg.co.za.

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Published by the Health and Medical Publishing Group (Pty) Ltd
Block F, Castle Walk Corporate Park, Nossob Street
Erasmuskloof Ext. 3, Pretoria

Email: publishing@hmpg.co.za | www.samainsider.org.za | Tel. 012 481 2069
Printed by Tandym Print (Pty) Ltd

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Genetic link, gamete-donor identity, surrogacy – the controversies of *in-vitro* fertilisation



Prof. Dan Ncayiyana, SAMA president

Louise Joy Brown, the world's first "test-tube baby", was delivered by caesarean section at 23h47 on 25 July 1978 at the Royal Oldham Hospital in the UK. The birth was a cloak-and-dagger affair. The news of a human pregnancy artificially contrived in a "test tube" (it was actually accomplished in a petri dish) had caused seismic wonderment, and the press was hounding the pregnant mother to the point where she had to be delivered in secret under an assumed name. The late hour of this historic birth was due to Patrick Steptoe, the pioneering obstetrician, having been delayed by his wife's birthday dinner – presumably indicative of either a highly devoted husband or a formidable wife. The two pioneers, Steptoe and his research collaborator, medical physiologist Robert Edwards, were overjoyed at the birth. Edwards (eventually to be awarded a Nobel Prize after Steptoe's death) was later to recall: "The new citizen continued to cry very loudly, and how we all loved that glorious sound."

Controversy surrounded *in-vitro* fertilisation (IVF) from the very beginning. Steptoe and Edwards started to work together in the 1960s, driven by the desire to help couples with fertility problems due to the woman's damaged fallopian tubes (then accounting for about a quarter of all cases of infertility). They pursued the unprecedented idea of extracting eggs directly from a woman's ovaries, fertilising them *in vitro* with the

husband's sperm, and then returning the embryo to the womb. However, experimenting in this way with human eggs and sperm outside the body was widely considered by many as unethical, if not immoral, and funding agencies, including the UK Medical Research Council, declined to fund the research. The project was rescued only when the Ford Foundation and some private US financiers agreed to provide the funding. The medical fraternity was at best sceptical (as is usual with pioneering medical initiatives and ideas), or even downright hostile. James Watson (of the Watson and Crick DNA molecule) denounced the researchers, questioning the wisdom of tampering with procreation. They were denounced by the Catholic Church, which remains opposed to IVF to this day for a variety of reasons, including Pope Benedict XVI's view that it "replaces love between a husband and wife". Pro-life advocates labelled IVF as a "perversion".

In time, however, IVF went on to gain wide acceptance. Since the birth of Louise Brown in 1987, it is estimated that two million babies have been born globally through the use of IVF. IVF technology has made huge advances through continuing research that has helped improve success rates and widen the pool of those who qualify. However, it is also hugely expensive and has become big business, with IVF clinics sprouting all over the world, not least in SA, with its world-class facilities and expertise. IVF and plastic surgery have become the predominant engines driving SA medical tourism.

IVF conundrums in SA

Concerned as it is in the very intimate and emotive subject of human reproduction, IVF has aroused social, cultural and religious conundrums around the globe, some country-specific, some universal, that cut across science and sociology, and revolve *inter alia* around IVF opening the door for same-sex couples to have children of their own; upsetting traditional conceptions of family; and raising questions about the psychological impact on the child. For this reason, countries have sought to make laws to regulate this medical intervention.

In SA, assisted reproduction is regulated by the National Health Act No. 61 of 2003 and the Regulations Relating to the Artificial Fertilisation of Persons, 2012, as well as the Children's Act No. 38 of 2005. According to the SA Law Reform Commission, "the legal position in SA is that gamete donors and surrogate mothers must be anonymous, and it is an offence to reveal the identity of a gamete donor or surrogate mother". The commission has launched a study into the appropriateness of this provision, putting the question of whether a child has a *right* to know its biological origins, for reasons of the child's sense of identity.

Anonymity is intended to protect the privacy of the egg or sperm donor, or the surrogate mother, and rescinding it would open a whole new can of worms. Donors do not donate in order to become parents of a multitude of disparate children, and may be spooked by the prospect that the resulting progeny might someday seek to establish a social or parental bond with their genetic parent. Indeed, countries where donor anonymity has been eliminated have seen their donor pool diminish.

In the realm of surrogate motherhood, SA law requires that the contemplated child be *genetically related* to one or both of the commissioning parents. This provision was recently challenged, unsuccessfully, in the Constitutional Court by a woman who had undergone multiple IVF cycles while married, until she ran out of her own eggs. She was subsequently divorced, and now sought to have a child through surrogacy using a donated ovum and sperm. The Concourt sustained the genetic-link requirement.

The child is certainly entitled to know at the appropriate age and time about his or her IVF origins. But it is not clear to me that disclosure to the child of the identity of the gamete donor or surrogate mother would help to reinforce bonding within the recipient family, or enhance the child's sense of identity. Prioritising the genetic link and genealogy to define family and identity unduly elevates the biological model above all others. Ultimately, what defines family and belonging for a child transcends biology. It is about active caring, nurturing and love.

Investigating free resources for SA doctors

SAMA Communications Department

Today we are all constantly attached to our mobile phones and computers, and depend on them to provide us with digital aids of every description. There are many apps, databases, programs, toll free hotlines and online courses (complete with CPD accreditation) available to medical practitioners, a lot of them for free.

This month we begin a series of articles on these free resources, and appeal to our readers to let us know of any such resources that they use regularly, and which could be of assistance to fellow practitioners.

Med Brief Africa

Med Brief Africa, a unique news-based mobile phone app available to more than 20 000 of the country's healthcare professionals on a daily basis, has been launched by newly established specialist IT publishing entity, BlankPage Publishing.

The app covers 16 specialist medical disciplines, including general practice, and features additional posts covering pharmacy, nursing, optometry and psychology.

Content comprises freshly sourced, written and edited clinical, medicopolitical and practice-management news items prepared on an ongoing basis by a team of news-media-trained journalists with almost 60 years of medical reporting and editing experience between them.

Provision has also been made for regular features such as in-practice management, and legal and funding matters.

By arrangement with their professional bodies and with the assistance of a leading medical-practice-management consultancy, medical specialists, once registered, can freely access their own specific field within the app, with the appropriate clinical and in-practice news, while general medical news on matters such as NHI, market enquiry developments and exclusive conference coverage is common to all.

Visiting either the Apple iStore or Google Play Store and downloading the app free of charge allows you to access Med Brief Africa. There is a brief registration requirement to ensure that only medical professionals have access – doctors are required to insert their MP number and complete the registration process, a

security measure to keep it exclusively for medical professionals. You can also access the app by inserting BlankPage2017 in the sign-in box.

For more information, contact BlankPage Publishing on 087 095 3225 or email on info@blankpage.co.za.

inPractice Africa

The 2017 edition of *inPractice Africa* is a free, continuously updated reference and learning resource for SA clinicians. The program provides CPD development certificate programmes, practice guidelines and drug reference information, as well as referral clinical support. *inPractice Africa* is designed to be used in two ways:

- To search for and efficiently find the information you need to care for individual patients
- To study complete modules and earn credit in the following areas: applying SA national guidelines on antiretroviral therapy (ART); nursing care of HIV-infected patients; management of tuberculosis (TB) in HIV-co-infected patients.

The resource answers many key questions, including:

- Do you know when to start ART in your patients?
- What do the latest SA guidelines say about recommended first-line treatment options?
- Do you follow best practices in monitoring HIV-infected patients receiving therapy for TB?
- Are you using the recommended regimens to prevent mother-to-child transmission in your practice?

The resource allows you to earn CPD credits free of charge for successfully passing the module post-tests – up to 60 CPD credits are available! Good news for clinicians who earned credit from this programme when it was initially launched in 2015/16 – as the content has been fully updated, you are eligible to earn up to 60 CPD credits once again!

inPractice Africa also offers SA-specific resources, including a drug reference database. You can access information about drugs by clicking on the relevant drug, or by following your search results where drugs appear in modules.

For more information and other resources, visit www.inpracticeafrica.com, or email customersupport@inpractice.com.

Foundation for Professional Development (FDP)

The following courses are offered by FDP free to scholarship holders, and there are scholarships available for medical doctors registered with the HPCSA:

- Short course in financial management: This online course for specialists and registrars recognises that private-practice specialists need to run well-functioning businesses, which requires financial thinking and smart decision-making. The course assists specialists who are SAMA members with developing a strong foundation in the basics of accounting and financial literacy. "We would like to avoid decisions being made without analysing the risk and reward or the profit and cash flow of the particular practice. This course will impart the knowledge necessary for private practitioners to understand and manage the financial aspects of their practice," says FDP. See <https://www.mpconsulting.co.za/products/online-cme/386/e-learning-short-course-in-financial-management>.
- Fraud-risk management for medical doctors: This online course recognises that medical doctors have become soft targets for fraud in both their private and professional capacities, mainly because doctors rarely have the time to investigate the origin of emails and financial documents, and generally do not have the support of IT staff to reduce fraud risk arising from the use of technology. The risk of fraud can never be eliminated, but this CPD/CME course will assist doctors to reduce the risk of financial loss, whether due to online scams, credit-card fraud, deposits and refunds, identity theft and many other fraudulent activities. Designed by the expert fraud-management team at Investec Bank, in association with FPD and Medical Practice Consulting to assist doctors in the management of fraud risk, the course is applicable to all doctors, whether in public or private practice. See <https://www.mpconsulting.co.za/products/online-cme/649/fraud-risk-management-for-medical-doctors>.

Primary Health Care Clinical Guide

Produced by The Open Medicine Project SA, this Department of Health (DoH) app gives healthcare workers easy access to the country's Primary Care Standard Treatment Guidelines and the Essential Medicines List.

Aimed at a broad range of healthcare workers, the app includes the following features:

- A cardiovascular risk-assessment tool, which efficiently calculates a patient's percentage risk of having a cardiovascular event such as a stroke or a heart attack in the next 10 years
- A paediatric drug-dosage calculator, which accurately calculates weight- or age-based dosage for children
- A medicine stock-out tool, which allows healthcare professionals to report medication shortages and stock-outs directly to the DoH.

To download the app, search for "PHC Clinical Guide" in the Apple iStore or Google Play Store.

The eDL app

This app is available from the Google Play Store and updated regularly. It provides a revolutionary way to exchange electronic discharge letters (eDL) and prevent the current problems related to the paper-based letters generated by doctors. Handwriting, use of narratives and unstructured text, lack of standardisation, language barriers, incompleteness and ambiguity are some of the problems addressed by the eDL app. It supports semantic interoperability of diagnosis and medications, raises allergy alerts and encourages patient empowerment, all of which ultimately improve patient safety.

Discovery Health – free apps and helpline and free ride

Discovery Health's Vitality Active Rewards for Doctors (VARD) tailors the rewards to the needs of doctors – starting with doctors currently registered for private practice. "The VARD programme is available to doctors at no charge on the Discovery smartphone app regardless of whether they have purchased any Discovery product. Once registered, doctors are challenged to meet personalised, weekly exercise goals based on current health and activity levels," explains Dr Goodman, Chief Medical Officer of Discovery Health. Doctors who reach their weekly goals earn

a voucher reward to redeem at KAUAI, Vida e Caffè, Mugg & Bean or Ster-Kinekor. They can also choose to donate their rewards to designated charities.

Participating doctors can also access an upfront 50% discount on Apple Watches and other wearable fitness devices, as well as an upfront 55% discount on the CardioChek point-of-care device that doctors can use to check their patients' cholesterol and blood sugar levels in their rooms. Doctors actively engaging in VARD can increase these discounts to 100%. "We are showing doctors the direct benefit that prioritising their own wellbeing has on their own lives and their patients' lives," says Dr Goodman.

By placing important patient information at your fingertips, Discovery's HealthID app provides you with a complete view of your patient's health history and test results. This improves patient care and reduces the likelihood of serious medical errors and duplicate or unnecessary pathology tests. In addition, HealthID also reduces your administrative burden by making it quick and easy to fill in chronic-illness benefit applications, and providing you with the relevant scheme formulary list. The app can be accessed through tablet apps, the Discovery website and certain practice-manager applications.

Discovery and the South African Depression and Anxiety Support Group (SADAG) recently launched a 24/7 mental-health helpline for doctors. "We are proud to announce the recent launch of a dedicated mental-health helpline for young doctors and medical students," explains Dr Goodman. When calling 0800 323 323, young medical professionals now have anonymous 24/7 access to free psychological support services.

For more information visit www.discovery.co.za.

Which apps do you use?

Dr Cobus van Niekerk kindly shared the apps he uses regularly and finds helpful:

- **HealthID (Discovery):** helps with daily running of Discovery-managed patients (see above for more details).
- **Calculate by QxMD:** works out anything, from ideal weight to Framingham risk score and many more. Calculate is a next-generation clinical calculator and decision support tool for iPhone, iPad, Android, Windows 10 and web, freely available to the medical community. It focuses on

highlighting tools which impact clinical practice and serve to impact diagnosis, treatment or determining prognosis. Available from <https://www.qxmd.com/apps/calculate-by-qxmd>.

- **Read by QxMD:** The newest studies become available and you can set your field of interest so that you do not receive studies from outside your field of interest. Described as a personalised medical journal, this app provides a single place to discover new research, read outstanding topic reviews and search PubMed. Free on iPad, iPhone and Android.
- **Eye Chart Pro:** To do visual examinations, the basic version is free. Eye Chart Pro is a generator for randomised Snellen and Tumbling E charts to offer a rough but useful screen of visual acuity. Simply press a button to randomise the entire eye chart, or touch an individual line of the chart to randomise that line. Tap another button to toggle between Snellen and Tumbling E charts. Available on the App Store for iOS devices.
- **EML Clinical Guide (DoH):** Look up primary-care algorithms as set up by the DoH. The app is free on Apple iStore, Google Play Store and Windows App Store.
- **HIV Clinical Guide (DoH):** Look at HIV care and which drugs and interventions to apply in different circumstance. The app provides guidelines and decision support for healthcare workers treating HIV patients in SA. The app is free on Apple iStore, Google Play Store and Windows App Store.
- **Lancet Mobile:** Real-time pathology results on your phone or tablet. Available from www.lancet.co.za.
- **BMJ Best Practice:** Fast and easy access to the latest evidence-based information on diagnosis and treatment for healthcare professionals. The app highlights evidence-based medicine and best practice. Available from <http://bestpractice.bmj.com/best-practice/marketing/best-practice-app.html>.
- **ICD-10 Lite:** This app is for when you need an ICD-10 code on the move and you are not close to your PC to look it up. Available from <https://itunes.apple.com/za/app/icd-10-lite-2013/id435280639?mt=8>.
- **DermaCompare:** Used to evaluate skin lesions – benign v. malignant – and the risk stratification in those needing excision. Available from <https://play.google.com/store/apps/details?id=com.emeraldmedical.dermacompareapp&hl=en>.

We look forward to hearing from our readers.

ABC of fluid and electrolyte therapy

Jan Pretorius, Steve Biko Academic Hospital, University of Pretoria

Fluid therapy is drug therapy: this is the primary message of this communication. Choose your drug wisely; calculate dosages according to daily needs during maintenance, according to response and sensible haemodynamic endpoints during shock therapy, and according to measured losses when replacing excessive fluid losses. The use of intravenous fluids must always be approached as one would any and all medication. This is the only rational approach to fluid therapy today. The following points are important:

- Fluid and electrolyte therapy is generally regarded as something benign, just something that goes on. It is now very clear that it is a vitally important issue.
- There is evidence that the type and volume of fluid used affects outcome. Too little is just as harmful as too much.
- Fluid therapy is the second-most-common hospital intervention after oxygen administration, yet the evidence regarding fluid and electrolyte therapy is quite limited.
- Fluids need to be given according to a much more considered scientific

approach than is currently used, because they constitute the physiological support of surgical patients and of any patient who is unable to ingest sufficient water and salts.

The importance of physiology and pathophysiology

What happens to fluids after infusion is an important consideration. A large number of physical and physiological principles control this: for example, capillary and interstitial hydrostatic pressure, capillary and interstitial oncotic pressure, inflammatory status, the integrity of the endothelial glycocalyx, serum albumin concentration, the amount of infused fluid and the presence of oedema. Many diseases can affect the patient's volume of distribution and organ function. The Starling equation need to be revised in view of new information about the glycocalyx. The role of the lymphatics to clear oedema must be emphasised.

Fluid therapy as drug therapy

The importance of a rational concept in approaching the entire *perioperative* use of fluids and electrolytes cannot be overemphasised. The success of the concept of enhanced recovery after surgery (ERAS) bears testimony to this. ERAS is a multimodal care pathway developed to manage and control all treatment modalities during the pre-, intra- and postoperative periods in order to attenuate the stress response and to promote early recovery. One of the most important issues is the judicious use of fluids and electrolytes.

Indjudicious use of fluids and electrolytes is a good example of how things can go wrong and cause many further problems, such as interstitial-space overload in most tissues and organ systems. This may affect oxygen and nutrient delivery, and lead to compartment syndromes. The best-known example is abdominal hypertension, leading to the abdominal compartment syndrome, which affects the functioning of all other organ systems in return. It is time to concede that fluid therapy should be precise and appropriate and calculated, NOT aggressive or sparing or conservative or limited or restrictive, or anything else.

It is essential to realise that there are three main indications for fluid therapy (see Table 1):

- The need to resuscitate – to correct intravascular volume deficits or acute hypovolaemia. The restoration of normal circulation is essential, to provide adequate tissue perfusion, oxygenation and nutrients to sustain normal metabolic processes.
- The need for maintenance – to specifically provide the patient's daily basal requirements for fluid, electrolytes and energy. This will often be extended to parenteral or enteral nutrition.
- The need for replacement – replacement of ongoing losses may be necessary in several clinical scenarios, e.g. in the case of severe burns or gastrointestinal fistulae.

It is important to understand and to remember that one or all of these three fluid regimens may be necessary, and therefore simultaneously or in sequence. For example, the patient admitted with a gastrointestinal

Table 1. Total Fluid Management: Indications for fluid and electrolyte therapy in surgical patients

Total Fluid Management (TFM)	Maintenance	Resuscitation	Replacement
1. Indication	Daily requirement	Hypovolaemia	Abnormal or continuing losses
2. Intention	According to a formula based on body mass	"Aggressively" according to endpoints	Collect drainage for 4 hours, replace % during next 4 hours, while collecting again
3. Infusion rate	Continuously per 24 hours – 24 equal doses	Bolus	Continuously according to losses
4. Type of fluid	Maintenance: Maintelyte 5% Electrolyte No. 2 10% sustenance 5%	Volume expander: Ringer's lactate (modified) Plasmalyte B saline colloids	According to fluid lost: Rehydration 5% dextrose in water 0.45% NaCl 0.9% NaCl Ringer's lactate
5. Monitor	Serum and urine electrolytes and osmol Fluid-balance chart	Central haemodynamics, stroke volume variation, passive leg raising, SvO ₂ , lactate, pH, base excess organ functions: urine flow/ brain function (awake)	Serum and urine electrolytes and osmol

fistula may need first resuscitation, followed by maintenance and nutrition as well as replacement of ongoing losses.

Keeping an accurate daily fluid-balance chart (intake and output) is key to successful fluid management. All fluids ingested enterally as well as administered parenterally, including all medications infused or dosed as boluses, must be accounted for *and* fit into the patient's *calculated* daily fluid allowance, to avoid fluid creep. Extending the fluid-balance chart to a cumulative charting for the duration of the patient's stay often explains why a patient has the appearance of a Michelin man.

Total Fluid Management (TFM) is a fundamental concept in fluid therapy. TFM is not total fluid minimisation, as some proclaim. Too few fluids are as dangerous as too many.

How much is enough?

From Table 1, it is clear that rules can be established for each indication for fluid therapy. Resuscitation should be conducted considering endpoints to *both* trigger and discontinue treatment. Resuscitation should therefore be completed within a reasonable time frame. Triggers to initiate therapy must be based on a careful history, and consider all the signs of intravascular volume deficit and hypoperfusion. It is essential, though, to consider the patient's responsiveness to fluids throughout therapy. This is not the same as preload status. There is no justification to continue fluid loading in a patient who is not responsive, or in other words is not able to increase stroke volume or cardiac output. In this instance, inotropic and/or vasoactive medication may be needed. Careful consideration of basic cardiac (i.e. the Frank Starling curve) and vascular physiology is always essential. Monitoring dynamic variables (NOT static pressures such as central venous pressure) such as a passive leg raise, stroke volume or stroke-volume variation and cardiac output is as essential as driving with your lights on at night.

Performing a passive leg-raise test is safe and simple. It is similar to a fully reversible intrinsic 500 mL transfusion. It can be performed in ventilated and non-ventilated patients and it is valid in the presence of arrhythmias. However, it is not practical during severe hypovolaemia and abdominal compartment syndrome. Sit the patient up 45 degrees, connect the patient to a monitor that can measure stroke volume and cardiac

output, or an arterial line or even an ordinary blood-pressure cuff. Next, lower the head and chest and lift the legs quickly to 45 degrees. This shifts about 500 mL of blood from the legs and abdomen into the chest, increasing cardiac preload. An increase of more than 10% in the stroke volume or an increase of more than 9% in the pulse pressure or an increase of more than 17% in the systolic blood pressure within 90 seconds indicate that the patient is fluid-responsive or preload-sensitive, and will increase the cardiac output after a fluid bolus.

Maintenance fluids constitute the physiological support of patients who cannot eat normally, are NPO (nil per mouth) post-op, do not want to eat, or who are unable to eat, e.g. due to obstruction of the gastrointestinal tract. Daily maintenance must be calculated according to the patient's body weight. This volume should make allowance for all fluids to be infused (medications, water and electrolytes), with the exception of resuscitation needs and replacement needs, which have their own rules.

Replacement of ongoing losses should be planned in light of the patient's total fluid status. To best maintain homeostasis, fluids should be replaced as they are lost. I suggest that the losses, if measurable, are collected over a period of 4 hours. If the patient is passing adequate volumes of urine and has few other signs of fluid deficit, administer only 50% of the volume collected over the next 4 hours, while the fluid losses are collected once again. If the patient is oliguric and thirsty, replace 100% of the collected fluid. One can therefore vary the amount to be replaced according to the clinical situation.

Pathophysiology

During stressful conditions such as trauma and sepsis, for which fluid therapy is usually indicated and administered, the pathophysiology of injury, leading to increasing sympathoadrenal activation and inflammation with endothelial activation, progressing to shock-induced endotheliopathy due to cellular and cytokine activation, compounds the effects of fluid overload. Inflammation also cross-reacts with the coagulation system, causing profound microvascular thrombosis and even thrombohaemorrhagic consumptive disorder and multiple organ dysfunction. Oedema is therefore not something to ignore – it should be prevented or minimised.

Fluid disturbances are often associated with electrolyte imbalances, as well as acid-base disturbances. A typical example is found with gastric outlet obstruction leading to dehydration (even hypovolaemic shock) and hypokalaemic, hypochloreaemic metabolic alkalosis. The serum sodium may also be low. This syndrome is typically associated with a paradoxical aciduria.

Surviving patients pass through three phases with regard to fluid therapy during acute illness. The first phase is the resuscitation period, during which the patient is rescued by administering fluids to restore the intravascular volume. In this phase fluids are therapeutic and essential, but should be goal-directed and administered early. On completion of resuscitation, maintenance therapy is used to re-establish stable homeostasis by optimising fluid status. Fluid strategy should now be calculated with the aim of equilibrating fluid balance. Increased fluid needs may now be a biomarker of critical illness. During the last phase, endothelial integrity is restored once again and often patients now develop a spontaneous diuresis. In this phase, one can attempt to promote the removal of excess fluids using albumin infusions and small doses of furosemide, aiming at a negative fluid balance. If increased capillary permeability persists globally, the oedema or excess fluids can be seen as toxic and part of multiple-organ dysfunction.

It is important to bear in mind that there is a time to administer fluids, a time to stop fluids and a time to "remove" excess fluids.

Conclusion

Fluid administration is a complex and difficult task that is influenced by:

- The clinical setting
- Comorbid conditions
- The disease process
- The use of other treatments
- Vasoactive drugs
- Mechanical ventilation.

Different strategies are needed at different stages of acute illness, in different disease states. Treatment should be individualised to suit a particular patient.

References are available from the author on request.

New code to change promotion of medical devices

SAMA Knowledge Management and Research Department

In the September edition of *SAMA Insider*, the SAMA Communications Department drew members' attention to the fact that the Department of Health has taken significant steps towards formally regulating medical devices and *in-vitro* diagnostics sold in SA.

These regulations will impose new responsibilities on healthcare providers in terms of the law, users and purchasers of medical devices will in future need to be alert to the registration requirements for such devices, and adhere to requirements regarding the keeping of registers for implantable devices and mandatory requirements for the reporting of any adverse events associated with medical devices.

In addition, and perhaps of more immediate importance to medical practitioners, the SA Medical Device Industry Association (SAMEDI) launched its *Medical Device Code of Ethical Marketing and Business Practice* in June 2017. SAMA was party to the launch of the code and is in support of its principles, values and objectives – but we recognise the potential implications for our membership and the need to raise awareness of the code and its requirements.

While the new regulations for medical devices and *in-vitro* diagnostics seek to safeguard the quality, efficacy and safety of medical devices in the country, SAMEDI's new code seeks to promote fair and ethical business practices in the promotion and procurement of medical devices.

SA is no stranger to codes of marketing practice – the *Code of Practice for the Marketing of Health Products in SA* was first published in 2010, through a collaborative effort between actors in the pharmaceutical, medical-device, laboratory and diagnostic and animal-health-product industries. While SAMEDI was originally involved in the drafting of this code, it has become apparent over time that the devices industry requires a specific set of ethical standards to apply, hence the development of the new devices code as it stands today.

The code is a self-regulatory mechanism, and is set to change many existing marketing practices in the industry. Its underlying principles stem from the industry's commitment that SAMEDI members (and medical-device companies in general) have a "social responsibility that extends beyond customers to patients and society in general" and from "SAMEDI's desire to foster co-operation and shared responsibility with healthcare professionals for the delivery of effective and efficient healthcare". To this

end, the underlying commitment from the industry members is that they will not offer any inducement to any healthcare provider or other customer in order to sell, lease, recommend or arrange for the sale or lease of their products.

The code recognises that medical devices are marketed in a manner that is distinct from the marketing in the pharmaceutical industry. The effective and safe use of medical devices often requires that healthcare professionals work closely with company representatives for the purposes of training and development. In addition, medical devices can be costly, representing a large investment to the healthcare-provider purchaser, and may also require repeated use, maintenance and repairs over a long period.

SAMEDI considers that these circumstances create strong interdependent relationships between healthcare providers and the medical-devices industry, which can potentially breed the risk of manipulation, collusion and unethical incentives to purchase.

The code seeks to facilitate ethical behaviour across the industry, as well as making provisions to enforce code compliance where necessary.

From the point of view of healthcare professionals, the code seeks to address and enforce ethical business practices in:

- the organisation and sponsorship of events
- the use of promotional items, gifts and competitions
- contracting with professionals as consultants
- research, royalties and registries
- the placement of demonstration or evaluation products
- the conduct of company representatives
- the industry utilisation of nursing professionals to provide patient support.

The code will apply across the board to SAMEDI members and their agents, third-party contractors, distributors, contracted event organisers and marketers.

The code may bring changes to the way individual doctors and events are sponsored. Direct sponsorship of healthcare professionals to attend third-party events will no longer be permitted from 1 January 2018. Event programmes will only be acceptable if they relate directly to the field of professional expertise of the healthcare professionals attending, and if they are held at venues that are not considered tourist or leisure resorts. Gifts,

rebates and discounts or any other pecuniary advantage which could be inducements to use, buy, administer, stock, etc., a product of a company are also not allowed. Limits have been placed on the characteristics and monetary value of promotional items as well.

While the nature of devices requires that healthcare providers have the opportunity to evaluate their utility and provide feedback if necessary, the code also seeks to clarify the intent and ethical practices around provision of products for the purposes of demonstration or evaluation. Essentially these practices are acceptable only if devices for demonstration or evaluation are provided free of charge, with no inducements to purchase, lease, recommend or prescribe, use, procure or supply the company's products. Delivery and return of the products must also be carefully managed and documented, and the quantity and time period supplied should be suited to the conditions necessary for healthcare professionals to familiarise themselves with the product.

Infringements of the code are to be identified through a complaints process, and SAMEDI considers that by reporting infringements, healthcare professionals will have a substantial role to play in ensuring that the code becomes an effective instrument. Although fees apply for companies to lodge complaints against one another, no such fees apply to members of the public and healthcare providers. The code includes a detailed schedule of sanctions which may be issued to companies found to be in breach of its provisions.

SAMEDI is also pursuing alignment with other codes and regulations, including the Medicines and Related Substances Act No. 101 of 1965, the Public Service Regulations 2016 Code of Conduct and the HPCSA policy on undesirable business practices, and guidelines and ethical rules of conduct for practitioners registered under the Health Professions Act No. 56 of 1974.

SAMA is cooperating with SAMEDI as a stakeholder to educate and assist in the dissemination and adoption of the principles of the code, and the specific requirements for interactions between healthcare professionals and the devices industry. We encourage all our members to familiarise themselves with the code, its principles and guidance.

The full details of the code are available at <http://www.samed.org.za/Codes-of-Practice.aspx>.

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MEMBER BENEFITS

A new age of junior doctors: Unscripted

Dr Farah Jawitz, JUDASA chairperson of Western Cape branch

At the Junior Doctors Association of SA (JUDASA)'s recent meeting, Dr Mohammed Dalwai said: "Most junior doctors enter the profession with the idea that they need to finish medical school, internship, community service, do some medical officer time, become a registrar, specialise, become a junior consultant, become a senior consultant, become a professor or head of department and then ... well, eventually die." However, it didn't take much for Dr Dalwai to convince those attending the first of JUDASA Western Cape's "Doctors Unscripted" series that a medical career often presents a host of interesting and unexpected opportunities. This was the first of the committee's open meetings, a chance for members, non-members and various stakeholders to brainstorm how junior doctors as individuals and groups can use their careers to make a difference.

Juxtaposing the old with the new, the event was held at the Cape Medical Museum on the original Somerset Hospital complex grounds, where the audience was treated to a tour of the museum. The museum

manager showed attendees the array of rooms showcasing original equipment and instruments from the hospital complex. Dr Mohammed Dalwai and Dr Vanessa Naidoo both later shared their experiences of joining the international organisation Doctors Without Borders/Médecins Sans Frontières. This served as a perfect backdrop against which to launch the reignition of the branch as it searches for ways to build a holistic community of junior doctors who can engage on challenges affecting the healthcare sector.

Having recently been instrumental in facilitating the transition from paper-based to online internship and community-service applications, as well as the reduction of continuous working hours for interns, it is with great anticipation that the branch hopes to build on this momentum in the next few months to inspire a group of socially conscious junior doctors. As Dr Naidoo reflects in her biography: "As doctors we have a responsibility to be the voice of our patients and advocate for access to quality healthcare and the preservation of human dignity in all contexts."



Dr Mohammed Dalwai, outgoing president of Doctors Without Borders/Médecins Sans Frontières (MSF) SA, has gained vast experience in high-conflict zones since 2011. He has worked in Pakistan, Libya, Northern Syria, Sierra Leone, Haiti and Afghanistan. In 2012, he was recognised on the Mail & Guardian list of Top 200 Young South Africans



At the Cape Medical Museum, left to right: Dr Farah Jawitz, the incoming chairperson of the Western Cape branch, who introduced the "Doctors Unscripted" series and outlined the goals of the branch over the next few months with Zahid Badroodien, Maleeka Abrahams-Kahaar and Masudah Paleker

What is the “One Health” approach?

Bernard Mutsago, SAMA health policy researcher

The “One Health” approach recognises that the health of humans, animals and the environment is interdependent, and becoming more so under the contemporary waves of urbanisation, globalisation, climate change and global biosecurity threats. One Health is the collaborative effort of multiple health-science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants and our environment.

Trackable to as far back as the era of Hippocrates, in his treatise *On Airs, Waters, and Places*, One Health is a unifying concept that aims to bring together human healthcare practitioners, veterinarians and public- and environmental-health professionals. Over the centuries, the animal-human-environment disease aetiology has been perpetuated by various physicians, epidemiologists and veterinarians, and in the late 19th century, German physician and pathologist Rudolf Virchow (1821 - 1902) coined the term “zoonosis”.

Today the facts and terms of zoonotic transmission have become clearer – albeit still poorly understood. Zoonoses, also known as zoonotic diseases, are infectious diseases that are transmittable from living animals (wild and domestic) to humans, or vice versa in some instances. The word zoonoses is derived from Greek words *zoon* (animal) and *nosos* (disease). The World Health Organization (WHO) defines zoonoses as “diseases and infections that are naturally transmitted between vertebrate animals and humans”.

The term One Health was introduced in the early 2000s as a concept that swiftly transformed into an approach, and is now regarded by some as a movement. The approach is backed by multiple international structures and organisations, such as the One Health Commission, One Health Initiative, One Health Initiative Task Force, One Health Initiative Autonomous *pro bono* Team, the European Commission, the US Department of State, US Department of Agriculture, US Centers for Disease Control and Prevention, the World Bank, World WHO, Food and Agriculture Organization of the United Nations, World Organisation for Animal Health, United Nations System Influenza Coordination, some universities and NGOs

and many other organisations that have a special focus on and role in the human-animal-ecosystems interface.

The first International One Health Congress was held in February 2011 in Melbourne, Australia, and the second in 2013 in Bangkok, Thailand. In some parts of the world, One Health has gained so much currency that One Health Day was successfully launched in November 2016 as an international campaign, co-ordinated by the One Health Commission, the One Health Initiative Autonomous *pro bono* Team and the One Health Platform Foundation.

SA and the African region

SA is an agro-exporting nation, and is considerably dependent on livestock productivity for subsistence. Zoonotics are neglected diseases in SA, despite their significant impact on the health of humans. Focus is disproportionately placed on HIV/AIDS. Zoonotic diseases are not prioritised at a political level, and there is limited capacity for surveillance. The medical curriculum does not adequately teach zoonotic diseases, resulting in doctors misdiagnosing zoonotics and often confusing their symptoms with malaria symptoms. There is only one veterinary school in the country (at the University of Pretoria), whose annual graduate output has recently risen from a paltry 130 to 190 per annum. Vaccination campaigns are sometimes carried out in SA, mainly in rural areas, for major zoonotics like rabies, but this is usually in response to reports of outbreaks rather than as a routine control strategy. Interprofessional co-ordination between medical and veterinary professionals is lacking, and there is a scarcity of epidemiological data. The Animal Diseases Act No. 35 of 1984 and related regulations deal with animal diseases and prescribe the necessary control schemes in SA. The country has experienced the ravages of climate change and the associated shift in the range of some infectious-disease vectors: for example, the geographical malaria zone is likely to expand to non-malaria-endemic provinces. Border communities are particularly vulnerable due to the easy migration or mobility of wild and domestic animals, human beings, disease vectors and food products.

A number of SA and other African institutions have awakened to the One Health approach. In SA, this has in part been

stimulated by the growing antimicrobial resistance. The first One Health Conference in Africa was held on July 14 -15, 2011 in Johannesburg. Locally and regionally, the One Health agenda is being peddled by a number of key scientific, educational and professional bodies, including the Southern African Centre for Infectious Disease Surveillance, the National Institute for Communicable Diseases (NICD), the NICD's Centre for Emerging Zoonotic and Parasitic Diseases, the University of Pretoria, the SA Veterinary Council and the National Zoological Gardens of SA. Recently, the twin medical and veterinary associations in SA, namely SAMA and SAVA (the SA Veterinary Association), respectively, have become more interested in and visible on the One Health agenda.

Current and emerging infectious diseases

The human-livestock-wildlife relationship sustains and spreads the zoonotic pathogens that have caused the majority of emerging infectious disease in the past few decades, especially in the tropics, such as Ebola, the Zika virus, Middle East respiratory syndrome (MERS), influenza H1N1 and H5N1, avian influenza, severe acute respiratory syndrome (SARS), food- and waterborne illnesses and a range of antimicrobial-resistant bacterial diseases such as multidrug-resistant and extensively drug-resistant tuberculosis (MDR-TB and XDR-TB). Globally, animal-derived diseases are a big threat to human health. It is known that, worldwide, at least 75% of emerging infectious diseases of humans (including Ebola, HIV and influenza) have an animal origin. Zoonotic diseases are caused by a range of pathogens such as viruses, bacteria, parasites and fungi. In the bacteria family, for example, over 200 bacterial zoonoses are known. The most problematic zoonotics in SA are (in their order of severity): brucellosis, rabies, TB and food-borne zoonotics. There is no treatment for *Brucella*-infected animals, so the “test-and-slaughter” policy is applied for the control of brucellosis, to the chagrin not only of SA commercial farmers, but also local communal farmers, for most of whom livestock ownership is a form of wealth and livelihood.

The value of interprofessional collaboration

There is global recognition that progress on emerging issues such as pandemic-influenza response and global food security is slowed by the lack of communication and collaboration among diverse One Health practitioners and the public and private sectors. Sadly, there is no firm history or evidence of active collaboration between the medical and veterinary professions in SA.

Such envisaged partnerships would help to bring about more effective interventions on a national scale to deal with the national concerns that such organisations share, notably the severe shortage of veterinary and medical professionals in SA. Effective collaboration will enable the sharing of scientific knowledge and expertise on: responsible antimicrobial use and antimicrobial resistance; safe food production and consumption; safe interaction with animals as pets and service creatures; prevention strategies; guidance to the public; and the advancement of medical and veterinary education to incorporate the One Health concept.

Two international medical and veterinary bodies have exemplified the cherished bringing together of animal and medical communities. The World Medical

Association (WMA) and the World Veterinary Association (WVA) signed a memorandum of understanding establishing an ongoing collaboration on the One Health concept. The Japan Medical Association followed suit and formed a similar relationship with the veterinary representative body in that country, as did the American Academy of Paediatrics with the American Veterinary Medical Association. SAMA is in the process of actively seeking a collaborative partnership with SAVA, and a meeting has been scheduled; both SAMA and SAVA are members of the global professional bodies WMA and WVA respectively.

Systemic constraints – SA

In addition to the challenge of scant interdisciplinary collaboration, SA veterinarians are in demand overseas, being well trained, and are registrable with the Royal College of Veterinary Surgeons in London, the Australian Veterinary Council and the New Zealand Veterinary Council, among others. This has led to an exodus of veterinary professionals. Nonetheless, the shortage of veterinarians in SA is gradually being alleviated through increased graduate output by the only veterinary school in the country (at the University of Pretoria), one

of the best veterinary schools in Africa and also world renowned. The introduction of the 1-year Compulsory Community Veterinary Service has also significantly alleviated the capacity pressure, but nevertheless, coupled with this quantitative “drought” in the veterinary fraternity is a qualitative quagmire: there is palpable inexperience among medical professionals in SA on zoonotics, as exemplified by the prevalent failure to recognize zoonotic symptoms (for example, rabies is commonly written off as encephalitis).

The NICD is the key public-health entity involved in infectious disease surveillance in SA. Unfortunately, the NICD is similarly capacity-constrained, and does not have the means to undertake active surveillance, resorting instead to the passive form. Another apparent fault line in the NICD is its complete focus on viral diseases; it would be prudent for it to focus on neglected non-viral zoonotics such as food-borne diarrhoeas, which are a burden among children in SA.

Through more vigorous advocacy action and the collaborative efforts of veterinarians, doctors, researchers, institutions and academics, the health of human and animal communities could be greatly protected, and the true essence of One Health realised.

SA Back Week – it’s time to stand up for yourself

SAMA Communications Department

SAMA urged all South Africans to take care of their backs as the country observed National Physiotherapy Back Week, which ran from 2 - 6 September.

“Most of us take little notice of our daily routine, and take our backs for granted, until we experience some form of pain. A systematic review done in 2007 found that low-back pain (LBP) was on the rise among Africans, with an average lifetime prevalence of 36% among adolescents, and 62% among adults,” said Dr Mzukisi Grootboom, chairperson of SAMA.

Dr Grootboom said exercise can help strengthen the back and abdomen, improve flexibility and improve posture. He said it also helps to maintain a healthy weight, which avoids excess pressure on the spine.

“We can take care of our backs by learning the correct postures to support our daily activities,” he notes. He offered the following tips:

Posture while driving

- Ensure your body has firm contact with the seat. Position the seat so that you do not

need to overstretch your legs to operate the pedals.

- Keep your head straight with the seat and backrest tilted slightly back. Elbows and knees should be slightly bent.
- If you have an existing back problem, an automatic car causes less stress on the spine.
- Climb out with care using both arms to push yourself out of the vehicle and shifting one leg out at a time. Turn your whole body and try to keep it as straight as possible.

Posture while standing

- Always stand with your legs slightly apart and distribute your weight evenly.
- Stand close to the task at hand, facing the work surface. Try not to bend forward.
- Wear comfortable, well-fitting shoes with good foot support.
- Work at a comfortable level, especially when doing precision work.
- Vary your activities frequently and change standing positions regularly.

Posture while reaching, lifting, and carrying

- Reach at a comfortable height, while balancing on both legs and standing on a sturdy surface. Do not overreach and strain your back.
- Carry the load close to your body at waist level. Don't lift anything too heavy for you – rather ask for help.
- Pull in your stomach muscles, while maintaining an upright posture.
- Bend your legs when lifting or lowering heavy objects, and carry objects with both hands.

Posture while sitting

- Keep your head in a balanced position (chin in), shoulders relaxed, and aligned with your hips.
- Keep your upper arms vertical and forearms horizontal and supported, and keep a balanced wrist position.
- Ensure adequate lower-back support at belt level, and sit up straight. Do not slump.

- Use a fully adjustable chair which is not too low or too soft.
- Remove any obstruction to leg movement, and keep your feet flat on the floor.
- Never sit in the same position for more than an hour, and do stretching exercises every hour.

Dr Grootboom said one should apply ice or heat to an area affected by pain, and use over-the-counter pain relievers such as ibuprofen or acetaminophen. "Importantly, shy away from activities involving heavy lifting or twisting your back. Should any other

conditions such as loss of bowel or bladder control, numbness, pins and needles, rapid weight loss, a history of cancer, drug use, or pain unrelated to movement present together with back pain, you should seek immediate medical intervention," he concluded.

SAMA hosts CPD in Burgersfort

Bokang Motlhaga, junior marketing officer

SAMA Private Practice Department recently hosted a Continuing Professional Development (CPD) session at Thaba Moshate Hotel Casino Convention Resort, Burgersfort. In his opening address, Dr Benny Choeu, the chairperson of the General Practitioner Private Practice Committee (GPPPC), explained that there has long been a dire need for this event.

Dr Norman Mabasa, panelist at the HPCSA, broke the ice by illustrating how medicine thrives on reputation through his use of precedent cases evaluated by the HPCSA. He mentioned typical examples of immorality or common areas of transgression that doctors are often charged with, and explained how each of those acts can ruin the reputation of the GP's practice.

On the back of this presentation, Dr Solly Motuba reminded the attendees of some of the pitfalls of claiming from medical aids, and discussed challenging cases in forensics which have been publicised and dealt with over the years.

Ms Shelley-Ann McGee, SAMA health policy researcher, delivered an insightful talk about the standards for general practice as set by the Office of Health Standards Compliance (OHSC). She described the objectives of the OHSC as

being the monitoring and enforcement of compliance with the National Prescribed Norms and Standards by health facilities, as well as the investigation and resolution of complaints relating to breaches of health norms and standards. Her presentation complimented Dr Mabasa's by emphasising that it should be health practitioners who enforce upon themselves compliance with health norms and standards, in an attempt to uphold their individual reputation and that of the medical fraternity.

Unpacking the topics of general practice codes and billing optimisation, Ms Jessie Masoma, the director of Red Elements, a company that offers cost effective services to healthcare professionals, stated that doctors in private practice should invest effort in formalising and professionalising their practices, because the public's perceptions can significantly influence their success or failure. Ms Masoma made reference to the newly developed term "doctorpreneur", which connotatively means that doctors should think businesswise. She hammered home the need for doctors in a private-practice setup to equip themselves with knowledge of the proper ways of general practice coding and billing, for which she declared the SAMA

Medical Doctors Coding Manual an effective reference.

On a still-informative yet lighter note, Dr Evelyn Moshokoa, the head of urology at the Steve Biko Academic Hospital, gave a talk about recent advances in sexual health. Dr Moshokoa addressed some of the most burning (no pun intended) issues facing patients and relationships where problems in sexual health exist, and how doctors are positioned to assist their patients with these. Dr Moshokoa's vast experience provided much insight into the complex psychological and physiological issues facing patients in this fascinating arena.

Dr Dandy Mahapa, a gynaecologist in private practice in Polokwane, addressed the plight of patients dealing with issues of infertility, and the many possible root causes of the problem. Using interactive videos of laparoscopic investigation into actual problem cases, Dr Mahapa took the audience on a journey through the complex problems and potential solutions available to couples facing the challenge of infertility.

The CPD session was well attended, which was clearly an indication that there had indeed been a dire need for it, as Dr Benny Choeu had said. SAMA would like to thank Medshield Medical Scheme for sponsoring the event.



Dr Benny Choeu, chairperson of GPPPC, handing a token of appreciation to Ms Jessie Masoma after her insightful presentation



Dr Stan Moloabi, principal officer at Medshield Medical Scheme, informing the attendees about Medshield Medical Scheme's objectives and role in the health sector



Dr Solly Motuba, head of SAMA Private Practice Department, unpacking the dos and don'ts pertinent to medical-aid forensics

SA Drug Policy Week tackles effective drug policy

Dr Lindi Shange, SAMA Health Policy Committee

Due to my association with a project called the Community-Oriented Substance-Use Project (COSUP), a collaboration between the City of Tshwane and the University of Pretoria, I had an opportunity to attend the SA Drug Policy Week in Cape Town from 31 July to 4 August 2017. Various local and international speakers made presentations and discussed the current evidence relating to the management of people who use illicit substances. The conference was convened by Shaun Shelly, the project, policy, advocacy and human-rights manager of People Who Use Drugs (PWUD) at the TB/HIV Care Association.

The theme of the conference was "Human rights, health and reducing harm, the essential elements of effective drug policy." The aims of the conference were:

- to expose key SA drug policy stakeholders, influencers and thought leaders to international experts, data, information and solutions that reduce the harms related to drug policy and drug use in a punitive and prohibitionist environment, promote public health and ensure the human rights of all South Africans
- to critically debate current drug policy, examining the impact on our communities, economy and stability
- to reinforce the human rights, health and harm reduction elements that are essential in developing effective drug policy
- to increase the level of debate and critical thinking around the use of drugs and our responses at individual, community, national and regional level
- to provide a platform for regional and African representatives to share information with each other and their SA counterparts
- to provide a platform for training and the exchange of ideas between local, regional and international organisations and representatives.

A manual, *Implementing Comprehensive HIV and HCV Programmes with People Who Inject Drugs: Practical Guidance for Collaborative Interventions* (known informally as the injecting drug-user implementation tool, IDUIT), was distributed and widely discussed at different breakaway sessions and workshops. This implementation tool contains practical advice on implementing HIV and hepatitis C programmes among people who inject drugs (PWID). According to the IDUIT,



Dr L M Shange (SAMA), Dr Constance Mataboge (Principal Psychiatrist, Tshwane District), Mr Kgalabi Ngako (Medicines Control Council) and Col. Refilwe Matlamela (SAPS Visible Policing)

the WHO, the United Nations Office on Drugs and Crime (UNODC) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) developed an evidence-based public-health response for PWID with a comprehensive package of nine interventions, in a technical guide published in 2009 and revised in 2012. This harm-reduction package has since been expanded into the following 10 interventions:

- Opioid-substitution therapy (OST) and other evidence-based drug-dependence treatment
- HIV testing services (HTS)
- Antiretroviral therapy (ART) for people living with HIV
- Prevention and treatment of sexually transmitted infections (STIs) (and sexual and reproductive health services)
- Condom programmes for PWID and their sexual partners
- Targeted information, education, and communication
- Prevention, vaccination, diagnosis and treatment of viral hepatitis B and C
- Prevention, diagnosis and treatment of tuberculosis
- Community distribution of naloxone for prevention and treatment of opioid overdose
- Needle and syringe programmes.

In a presentation on the Global Commission on Drug Policy, some medical perspectives were cited as challenges in SA, which included the following:

- Medical perspectives are limited to conservative, morally based views

- There is no clear support from:

- SAMA
- the Southern African HIV Clinicians Society
- the SA Nursing Council.

This was a wakeup call for me – I realised that at some point, SAMA, as an organisation, will need to issue a position statement on this subject. This will not be an easy task for an organisation that represents more than 16 000 diverse medical doctors. This topic has the propensity to raise differing ethical, professional and emotional reactions, but we need to talk about drugs and drug policy. We need to have the "difficult conversations", to understand the issues and identify appropriate solutions. It is generally accepted that no single approach will solve the problem of substance use, and a balanced, integrated combination of strategies is advocated. In our everyday work, most of us find it difficult to deal with the impact of drugs on the health and well-being of communities. To quote Olusegun Obasanjo, chair of the West Africa Commission on Drugs, "We must have the courage to change policies that no longer fit reality." I think this should start with a sincere assessment of what is and is not working.

I would like to present the current evidence and data in a series of future articles with a view to opening a discussion, and to help individual clinicians and institutions to formulate an approach in the management of PWUD and PWID.

References are available from the author on request.

Discussing climate change

Dr Akhtar Hussain, SEDASA



Climate change is not about changes in the weather in some distant future. It is already with us. People in various parts of the world are experiencing extreme weather such as droughts and floods, uncertain rainfall and rising sea levels. We see increasing floods in SA; the recent floods in Gauteng claimed the lives of 40 people. These changes are a threat to our health, jobs and livelihoods – and in the end, our survival on the planet.

Climate change is caused by our present system of production, distribution and consumption, a system which is both unjust and unsustainable. We have to change our way of producing energy, and the way we work, produce goods and provide services. We have to create a low-carbon economy, to preserve our planet for future generations and to reduce the impact of climate change on our water, food, livelihoods and other necessities.

Social and economic impacts of climate change

Climate change is affecting issues like water supply and food prices that are important to the working class. We need to inform ourselves about coming and likely changes, so that we can plan and organise ourselves to deal with the impacts. We need to not feel helpless. The issues unions have been fighting for and building – full employment, decent jobs and livelihoods, gender equality, clean water for all, food security, affordable access to healthcare, better education, decent housing in well-planned settlements with good affordable transport, people uniting to help each other, environmental sustainability, an economy which puts people before profits – are the same things that will strengthen us to deal with climate change.

Fresh water supply

The challenges of equitably distributing SA's limited water resources will be worsened by climate change. We are already a "water-stressed" country; we will soon become a "water-scarce" country (meaning natural systems supply less than 1 000 cubic metres of water per person per year).

Agriculture and forestry

Food-security problems will be worsened by climate change. Jobs, production and revenues from these sectors will also be affected. This is because:

- Areas suitable for agriculture and forestry will shrink. We already cannot plant crops on more than 14% of our land.
- Growing seasons will get shorter.
- The land's potential harvest yield will lessen, particularly in semi-arid and arid areas. The south-west of the country is already getting drier. This will particularly affect the farming of maize in summer rainfall areas, and fruit and cereals in winter rainfall areas.
- We may not be able to grow the same types of crops in the same areas as before. For example, some farmers in the Western Cape are changing from grapes to olives (also because world prices for wine are dropping). Climate change will even affect the price and taste of beer. South African Breweries is trying to find a solution to the risks caused by climate change in the Western Cape where hops (a main ingredient of beer) is grown.
- Natural rangelands used for grazing are vulnerable to climate change.
- Many pests and diseases that threaten crops and livestock will naturally flourish under warmer conditions.
- More intense rains will cause more erosion.
- extreme weather events will impact agricultural production, which takes place outside and on the land.
- An increase in dry spells and hotter temperatures will increase the likelihood and strength of wildfires, which threaten forestry.

Hunger in SA

Presently about 40% of South Africans are "food insecure", meaning that they go hungry

sometimes. In the city of Johannesburg, 42% of households are classified as food insecure, and this increase to 70% of households in the poorest areas. One in every four SA children under the age of six is showing signs of stunted growth due to malnutrition. This means that we are producing a new generation that is damaged both physical and mentally.

Rising food prices mean that food insecurity – the polite term to describe people going hungry – will increase. We need to address poverty and inequality, change our methods of agricultural production and distribution and take action to stop climate change. Unless we take drastic action, we could face food catastrophe in SA.

Human health

SA's health system is already overstretched and under-resourced. Under widespread poverty, people's health and their ability to recover suffer. This includes mental-health issues such as stress and depression. Climate change will add to our health problems, because:

- water shortages and increased malnutrition undermine people's health and ability to cope with disease and other stresses
- diseases are spreading or moving due to hotter temperatures and changes to rainfall patterns in southern Africa. For example:
 - mosquitos and ticks carrying malaria and other diseases can now survive further south and west
 - outbreaks of cholera and other water-borne diseases are linked to hotter conditions, flooding and warmer sea surfaces
 - pathogens leading to skin diseases, infection and food-borne diseases like diarrhoea flourish in warmer, wetter conditions.
- people's immune systems and our health system may not be equipped to deal with certain diseases in areas that have not experienced those diseases before
- alien plants spread and push out indigenous species which many people use for food and medicines
- in urban areas, higher levels of certain greenhouse gases lead to heart and lung diseases
- with more evaporation, poisonous pollutants in water become more concentrated and dangerous

- extreme weather events and disasters lead to deaths, injuries and illnesses.

Understanding what is causing climate change

There is a physical cause-and-effect chain from greenhouse gases, to global warming, to climate change. Since industrialisation started in Europe in the mid-1700s, human activity has released increasing amounts of greenhouse gases into the atmosphere. These are the gases that trap heat, leading to global warming, which is causing climate change. We need to adapt the way our economies function, to avoid worsening the problem – and can take the opportunity to create greater economic justice in the process.

The international politics of climate change

Climate change is a deeply political issue, in the sense that it reflects relations of inequality, power and injustice that have been created within an unsustainable world economic order. Greenhouse gases released anywhere in the world go into the same one atmosphere we all share, and have worldwide effects. Economic globalisation, geopolitics and the geophysical working of the planet all make climate change an international issue that

cannot be solved by or within one country alone.

Multinationals, countries, sectors, companies and other collectives are responsible for the economic activity that causes emissions, and that is where we can make changes. We can strategise and act in all these spheres to limit climate change and better deal with its impacts. This will be a part of wider working-class struggles around economic and political power, and advancing justice and gender equality. Internationalism – building unity and campaigning across national borders – needs to be part of the way we organise.

Principles of the COSATU climate-change policy

The Congress of SA Trade Unions (COSATU)'s climate-change policy, adopted in 2011, is based on the following principles:

- Capitalist accumulation has been the underlying cause of excessive greenhouse gas emissions, and therefore of global warming and climate change.
- A new low-carbon development path is needed which addresses the need for decent jobs and the elimination of unemployment
- Food insecurity must be urgently addressed.
- All South Africans have the right to clean, safe and affordable energy.
- All South Africans have the right to clean water.
- We need a massive ramping up of public transport in SA.
- The impacts of climate change on health must be understood and dealt with in the context of the demand for universal access to healthcare.
- A just transition to a low-carbon and climate-resilient economy is required.
- We need a carbon budget for SA.
- African solidarity is imperative.
- An ambitious, legally binding international agreement designed to limit temperature increases to a maximum of 1.5°C is essential as an outcome of the United Nations Framework Convention on Climate Change (UNFCCC) process.
- We reject market mechanisms to reduce carbon emissions.
- Developed countries must pay for their climate debt, and the Green Climate Fund must be accountable.
- We need investment in technology, and technology transfers to developing countries must not be fettered by intellectual property rights.
- The SA government's position in the UNFCCC processes must properly represent the interests of the people.

Medical cannabis discussed at Mamelodi CPD

Sarah Molefe, junior marketing officer

SAMA, in collaboration with Old Mutual, conducted a Continuing Professional Development (CPD) session at Mamelodi Regional Hospital on Friday 18 August 2017. The topic of the session was "Medical cannabis". SAMA has noted a need to hold more CPD sessions and ensure that doctors are enlightened about matters of interest in their work environments.

Shelley-Ann McGee, health-policy researcher at SAMA, delivered a presentation on cannabis for medicinal use. She discussed the available evidence base for therapeutic uses and for potential harms. The evidence base is still largely weak, with very few good-quality clinical trials conducted and limited evidence for most indications for which it is often promoted. Concerns remain about potential adverse effects on individuals, as well as the public-health implications of legalising cannabis use for medicinal purposes. SAMA remains opposed to the decriminalisation or

legalisation of cannabis for recreation, but is in support of further research into potential medicinal indications. There have been recent confusing reports in the media and advertisements disseminated regarding the legal status of cannabis. It was concluded that despite recent legal proceedings and announcements by the Medicines Control Council, for now, cannabis remains illegal in SA for both medicinal and recreational purposes.

Ms Gcobisa Qupa, business development manager for the Gauteng region, discussed the following topics:

- perspectives on financial planning: a holistic view of financial planning and the financial planning process
- investments, retirement planning, wealth protection, wills and estate planning
- retirement planning: the retirement landscape, expenses at retirement and income-replacement ratio
- annuities and retirement reforms
- risk planning/wealth protection: understanding how to provide security in the case of disablement and for those who you may leave behind in case of death
- wills and estate planning; goal-setting; written plans, accurate listing of assets and liabilities.



Shelley-Ann McGee (SAMA health policy researcher), Dr Ikombela (medical doctor at Mamelodi Regional Hospital) and Gcobisa Qupa (business development manager at Old Mutual, Gauteng Region)

SAMA PhD scholarship provides invaluable support

Prof. Nicola Wearne



The PhD scholarship provided by SAMA has provided invaluable financial support to the project "The role of transforming growth factor beta-1 (TGF- β 1) as a promoter of renal fibrosis in HIV-associated nephropathy, and the use of corticosteroids as a therapeutic option".

The aims of the project are to:

- assess the genetic contribution of TGF- β 1 in an SA context, and evaluate identified African-specific TGF- β 1 single-nucleotide polymorphisms (SNPS)
- evaluate the addition of adjuvant corticosteroids to antiretroviral treatment (ART) for the treatment of the inflammatory-cell infiltration seen in HIV-associated nephropathy (HIVAN)
- investigate the role of multiparametric magnetic resonance imaging (MRI) for assessing renal fibrosis in patients with biopsy-proven HIVAN.

Sub-Saharan Africa remains the epicentre of the HIV epidemic. HIVAN represents the hallmark of kidney disease in HIV. Histological evaluation of HIVAN confirms the presence of glomerular, interstitial and tubular involvement. Much of the research to date has focused on the glomerular component of the disease. However, commonly there is a diffuse inflammatory-cell infiltrate of plasma cells in the interstitium. There is upregulation of several genes responsible for the inflammatory response, with the subsequent release of inflammatory mediators such as tumour-like growth-factor β (TGF- β). HIV proteins appear to augment the TGF- β 1-mediated pathways in the kidney, at least in the mouse model.

There is a plausible role for the adjuvant use of corticosteroids for the treatment of the interstitial inflammatory-cell infiltrate in the treatment of HIVAN to dampen down the inflammatory response and prevent subsequent fibrosis.

Two pilot studies have been completed that provide the building blocks for this PhD. The first pilot study on African-specific SNPS in HIVAN, "The functionality of African-specific variants in the TGF- β 1 regulatory region and their potential role in HIVAN", is in the process of revision for publication. We have established that:

- African-specific haplotypes reduce TGF- β 1 promoter activity
- HIV transactivator of transcription (tat) upregulates TGF- β 1 promoter activity irrespective of the haplotype

- renal biopsies from HIVAN cases show prominent TGF- β 1 interstitial staining, which was absent in HIV-positive and HIV-negative controls.

The second pilot study, "The use of corticosteroids to treat HIV-associated nephropathy in naive patients initiated on ART in South Africa: A randomised controlled trial", has also been completed, and is in the process of being submitted for publication. This study aimed to ascertain treatment benefits of corticosteroids as adjuvant therapy to ART in 38 patients (21 patients received ART plus corticosteroids, and 17 received ART alone) and assess infection risk in a region where tuberculosis is endemic and renal replacement therapy is restricted.

Over the 2-year period, the group receiving ART plus corticosteroids had a statistically significant improvement in estimated glomerular filtration rate (eGFR) from baseline at 24 months compared with ART alone, i.e. D=21.0 mL/min v. 6.5 mL/min ($p=0.017$). There was also a trend towards a reduction in fibrosis in those initiated on corticosteroids. Based on this study, corticosteroids may be considered as adjuvant therapy in the treatment of renal-biopsy proven HIVAN; however, a larger trial is required to verify these results.

Both these pilot studies have been necessary to gain further insight into the larger randomised controlled trial that is about to commence as part of the PhD.

Expansion of NAPPI code to seven digits

SAMA Private Practice Department

The National Pharmaceutical Product Interface Code (or NAPPI code as it is commonly known) is an intelligent, unique national coding system for all pharmaceutical, surgical and healthcare consumable products available in the SA private-healthcare sector.

NAPPI codes have successfully enabled reliable and efficient electronic claims processing for almost 30 years in SA and there are currently almost 300 000 active NAPPI codes in the industry.

NAPPI codes will now be expanded to seven digits to continue meeting the requirements of all industry stakeholders. The implementation date for this change will be 1 March 2018, allowing sufficient time for all users of NAPPI codes to prepare for this change.

Please note that it is the responsibility of each organisation affected by the change to evaluate its impact, then plan and implement their changes by the above implementation date, accordingly.

Since this change will also affect how organisations interface with each other, each organisation will need to co-ordinate with their interfacing parties to ensure changes are tested and implemented by the implementation date.

For further details of this implementation, please refer to the Technical Guidelines document published on the MediKredit website: https://www.medikredit.co.za/index.php?option=com_content&view=article&id=93&Itemid=213.

Cutting corners

The Medical Protection Society shares a case report from their files

L was a healthy 4-year-old boy who caught his finger in a bicycle wheel, amputating part of the distal phalanx. In the emergency department of the local hospital, it was found that the pulp and nail bed of the finger were lost and the bone of the terminal phalanx was exposed. L was admitted under plastic surgery, fasted and booked for theatre for terminalisation of the finger.

He was assessed for general anaesthesia by consultant anaesthetist Dr B, who noted that L was a fit and well boy weighing 17.5 kg, had no medical problems or allergies and had been appropriately fasted. Dr B conducted an inhalational induction of anaesthesia, with 70% nitrous oxide, 30% oxygen and 4% sevoflurane via a modified Ayre's T-piece, using fresh gas flows of 8 L/min.

Dr B inserted a laryngeal mask airway (LMA) to maintain the airway, and maintained the anaesthetic with a mixture of nitrous oxide, oxygen and sevoflurane. An intravenous cannula was inserted once L was asleep; 15 µg of fentanyl and 2 mg of ondansetron were given and a slow infusion of dextrose saline was administered.

Plastic surgeon Dr T performed the surgery, which proceeded uneventfully. Dr T performed a ring block with 3 mL of 0.5% plain bupivacaine for postoperative analgesia. Towards the end of the operation, as Dr T was applying the dressings, the theatre sister, Sr S, noted that L's pulse was very slow at 45 bpm. The pulse oximeter showed that the saturations were 52%.

Dr B removed the drapes and L's face was noted to be cyanosed and his pupils widely dilated. Dr B removed the LMA, but the throat was clear. He applied 100% oxygen by facemask and an oropharyngeal airway. No pulse was palpable after 20 seconds of high flow oxygen, so Dr B instructed the surgeon to perform external chest compressions. He gave 0.1 mg of adrenaline and a second dose after 2 minutes. The second dose was effective in restoring a palpable pulse, and the oxygen saturations recovered to normal.

When attempts were made to wake L from the anaesthetic, he manifested severe extensor spasms and epileptiform movements of his limbs. He was intubated, sedated and transferred to intensive care. After a prolonged period of care, he was discharged from intensive care with

extensive neurological damage consistent with hypoxic brain injury.

An extensive inquiry was undertaken, which highlighted several areas of very deficient anaesthetic care. Dr B had not spoken to L's parents before the anaesthetic, and had not warned them of the risks of anaesthesia. Dr B said he had finished a 12-hour list with another surgeon and had agreed to help out at short notice. After induction, Dr B had left the reservoir bag concealed under the drapes, where he could not see its movement. He had not used a capnograph to monitor respiration. He had not recorded blood pressure or respiratory rate at any time during the surgery. The monitor alarms had all been switched off earlier in the day and he had not checked or reinstated them. Dr B accepted that there was a protracted period of inadequate vigilance during the case, during which a prolonged episode of severe hypoxia occurred.

This case occurred over a decade ago and L is now a teenager. He has profound impairment of sensation, movement, communication, intellectual function and memory. L's parents made a claim against Dr B, which was settled for a large sum.



Learning points

- A series of human and equipment factors interacted in a catastrophic way to bring about this tragic outcome from a trivial initial injury.
- Fatigue can be a powerful cause of reduced vigilance, and is associated with increased risk of error. However, it does not amount to a defence. The mnemonic HALT reminds all healthcare professionals to be extra careful if they are hungry, angry, late or tired. Always ask yourself: am I safe to work?
- Most anaesthetic machines now incorporate capnography automatically. It is also more difficult to switch off all the alarms on the anaesthetic machine. However, distractions in theatre have become more common, including portable electronic devices that can distract healthcare professionals with text messages and emails.

Eastern Highveld honour chairman and councillors

On Spring Day, the Eastern Highveld branch of SAMA hosted a dinner at Braza Restaurant in the Emperors Palace in Boksburg to honour our former chairman and branch councillors.

Dr Ngwenya paid tribute to Dr Jess Bouwer, who is the past chairman of our branch and whose name first appeared in our minute books in July 1975. Dr Bouwer served the former Medical Association as well as the newly established SAMA in many capacities. He has served on the Medical Association's peer-review committee and federal council, SAMA's national council, the chairman's forum and our branch council. Not only has he had a long standing involvement with head office structures, but he has been a stalwart of the Eastern Highveld branch.

Dr Bouwer served as president and has steered the Eastern Highveld ship since 1989. He is a graduate of Pretoria University, where he was a first-team rugby player, and has been in private practice in Edenvale for many years.

Dr Ngwenya presented Dr Bouwer with a past-chairman's medal in recognition of his service to our branch. A basket of flowers was presented to Harriet, his wife, for her loyal support throughout his long-standing commitment to the association.

The evening was a farewell dinner not only to our former chairman, but also to our loyal branch councillors.

Dr Marina Roux, a long-serving branch councillor, was our honorary secretary/treasurer for many years, looking after the financial interests of our branch to ensure that we were financially stable. Dr Roux has the distinction of being the first, and so far the only, female president of our branch. Not only did she serve on branch council, but she was also as a national councillor, as well as serving on the Education, Science and Technology Committee at head office. Among the many qualifications that Dr Roux has collected, she has a degree in palliative care, and is actively involved with the aged community in Benoni.

Dr Phil Erasmus, the other half of the Erasmus Family Physician practice in Benoni, has served the branch with distinction as a councillor and a president. He runs a diabetic programme in Benoni in addition to his busy practice.

Last but not least, we honoured councillor Dr Heide-Marie Smalberger, who before joining our branch council was associated with the Bloemfontein branch council. When she moved to Benoni, she did not hesitate to offer her services to our branch, and has been an invaluable member for many years.

Dr Ngwenya thanked all our former councillors for their unselfish dedication to our branch, and expressed the sincere hope that they would support future branch initiatives.



Dr Ngwenya thanking Dr Erasmus and Dr Roux for their commitment to and support of our branch



Dr Ngwenya thanking Dr Bouwer and presenting him with his past-chairman's medal

Gauteng North donate to Laerskool Generaal Beyers

SAMA Gauteng North branch recently donated stationery worth ZAR10 000 to Laerskool Generaal Beyers in Danville, Pretoria. The school is located on the outskirts of Pretoria, and most of the learners who attend it are from previously disadvantaged backgrounds.

SAMA Corporate Social Responsibility (SAMA CSR) took it upon its shoulders to start this project, and approached various organisations to come on board and help to relieve the plight of the learners at Laerskool Generaal Beyers. With assistance from Spar Elarduspark, Pick n Pay Waterglen and Spar Queenswood, the sum worth of stationery donated to the school amounted to ZAR18 500.

The stationery donated included mathematical sets, calculators and other

stationery significant for daily class usage. The speakers from Laerskool Generaal Beyers

expressed their gratitude and thanked SAMA for assisting in the education of the learners.



The learners from Laerskool Generaal Beyers and some of the people who attended the handing over of stationery



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