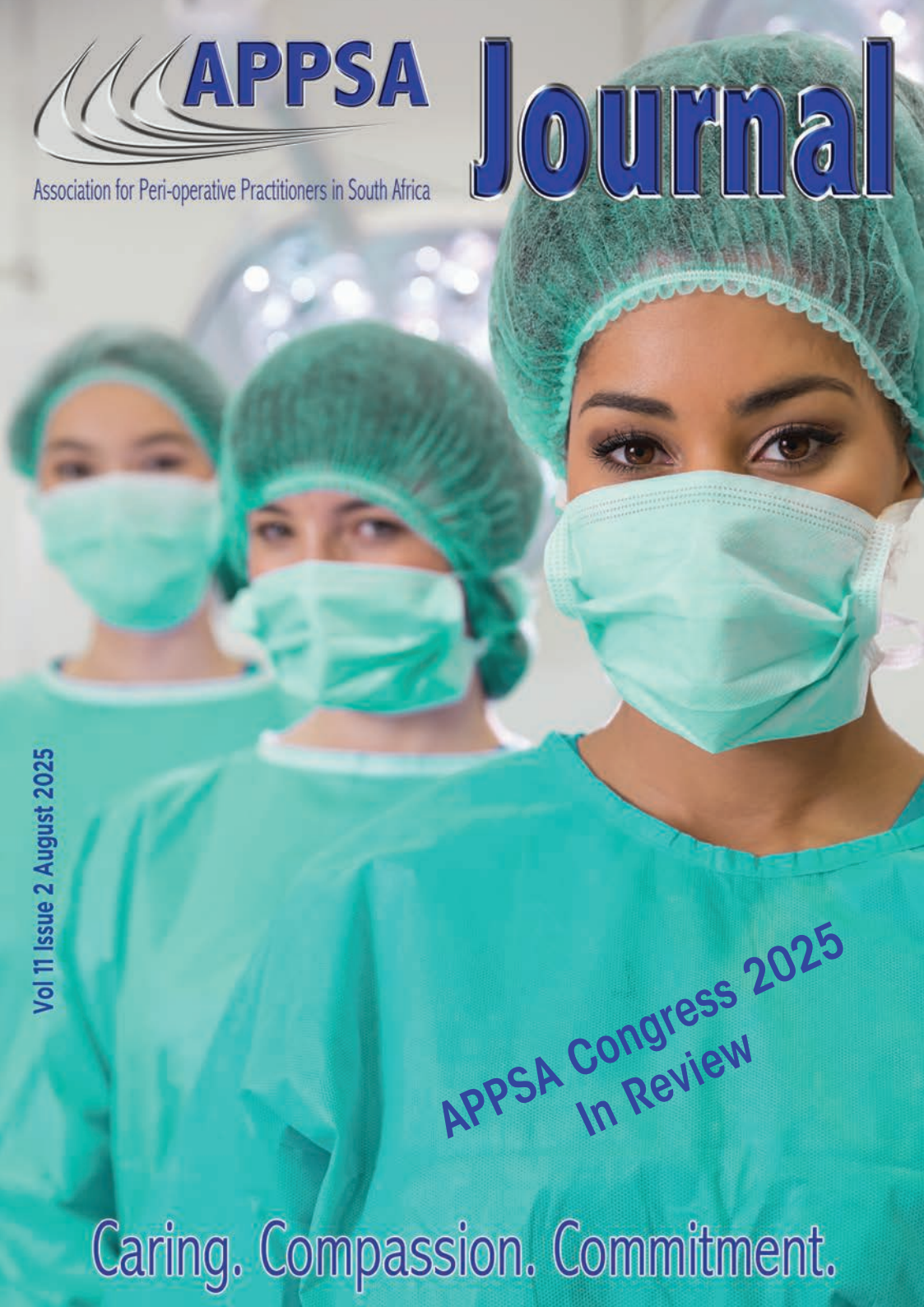
APPSA
Association for Peri-operative Practitioners in South Africa

Journal



Vol 11 Issue 2 August 2025

APPSA Congress 2025 In Review

Caring. Compassion. Commitment.

MEDHOLD
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Flow Chart for Manual Reprocessing of Soiled Instruments

STEP 1

Pre-Treatment foam
For surgical instruments.

Applied immediately after used – prevent drying of surgical soil
Neutral pH, keeps soils moist for up to 100 hour
Foam breaks down soil – inhibiting microbial growth- bacteriostatic
Easily rinsed from surfaces.

Or

Pre-Water rinse
Rinse off all blood, body fluid and tissue immediately after use, using cold water

01

STEP 2

Mix Solution
Getinge Enzymatic Detergent

Dosing according to manufacturer recommendations
Dosing range 2–10 ml/l
Cleaning temperature (manual) 30–45 °C (same as for baby bath temp)

02

STEP 3

03

Cleaning process
Use appropriated cleaning brushes
Brushing process should be one way wash action- prevent pullback of soil
Wash instrument below water/detergent solution surface – ensure contact time.
Adequate contact time should be at least for 2min

STEP 4

Rise - post cleaning
Ensure thorough rinsing, with clean water

04

STEP 5

Inspect - post cleaning
Inspect all instruments surfaces to ensure visible clean and free of stains and tissue
Inspect for proper function and condition
Oil instruments open and close needle holders, scissors and other hinged instruments - using an Oily pen

05

Reminder always ware proper PPE

STEP 6

06

Dry of the Instruments
Infection Prevention

Dry instruments thoroughly with a clean paper towel every time
A High pressure air gun can be used which is most effective
Drying minimizes the risk of corrosion and forming of water spots
Most important are prevention of recontamination

Reprocessing refers to infection control procedures for removing and inactivating microorganisms on reusable patient-care equipment. Reprocessing of reusable medical devices/instruments includes cleaning, disinfection, and sterilization

For more information - Visit our website www.Medhold.co.za

GENERAL INFORMATION

- The Journal is the official publication of APPSA (Association for Peri-operative Practitioners in South Africa). It provides personnel in the operating room and related services with original, practical information, based on scientific fact and principle

- APPSA is a non-profit organisation which exists for the benefit of its members. This is accomplished by way of congresses, local meetings and travel grants, with the express goal of raising the standard of peri-operative practice in South Africa

- Revenue is raised from, among other sources, the sale of advertising in the APPSA Journal

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Association for Peri-operative Practitioners in South Africa

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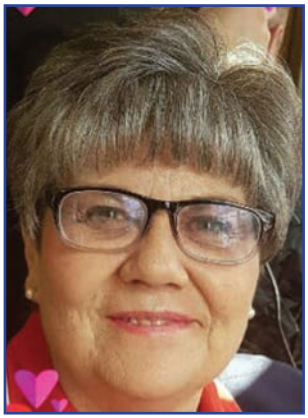

From The President

Dear Colleagues and Members,
I am delighted to share with you the tremendous success of our recent APPSA National Congress, held from 16-18 May 2024. As National President, I could not be prouder of the exceptional participation, engagement, and professional development that characterised these three transformative days.

Our Congress, themed "A Time for Excellence," brought together 140 delegates daily along with 20 trade members each day, creating an invaluable platform for knowledge exchange, networking, and advancing our profession. The quality of presentations, workshops, and discussions exceeded all expectations, demonstrating the remarkable expertise and dedication within our private practice community.

The Congress opened with Mrs Madeleine Hicklin delivering a crucial and enlightening presentation about the National Health Insurance (NHI), clearly outlining the facts and challenges that our profession faces in this evolving healthcare landscape. Saturday morning featured the latest technological advances in the CSSD (Central Sterile Supply Department) sector, providing delegates with highly informative insights into cutting-edge developments in our field. Our glamorous formal dinner was a highlight of the Congress, where delegates never cease to amaze with their stunning outfits and elegant attire. The evening was thoroughly enjoyed by all, complemented by excellent cuisine and wonderful fellowship among colleagues.

Sunday brought exceptional insights when we learned that CPDs (Continuing Professional Development) will serve as the platform for excellence in our profession. Our motivational speaker, Marion Horn, delivered an exceptional presentation that clearly resonated with all delegates, who thoroughly enjoyed her inspiring performance. I want to extend my heartfelt gratitude to all our presenters, sponsors, organising committee members, and volunteers who made this Congress possible. Their commitment to advancing our profession and supporting our association is truly commendable.

I am deeply honoured to announce that I have been asked to continue serving as National President for an additional two years. I humbly accept this responsibility and am grateful for the trust and confidence placed in me by our Chapter Presidents and membership. I would like to extend my heartfelt thanks to all our Chapter Presidents for their unwavering trust in asking me to remain in this position for another two years. Your confidence in my leadership is both humbling and motivating. I also want to acknowledge and thank each Chapter President for their exceptional hard work and dedication to our organisation. Your commitment at the local level is the foundation of our national strength. I encourage all Chapter Presidents to continue building up our organisation with the same passion and excellence you have demonstrated. Together, we are creating a stronger future for APPSA and for private practice in our field.

The success of this Congress reinforces APPSA's vital role in supporting private practitioners and elevating standards across our field. As we move forward into the next two years of my presidency, we remain committed to providing our members with exceptional professional development opportunities and fostering a strong, collaborative community. Thank you to all who participated and contributed to making this Congress such a remarkable success. I look forward to our continued growth and achievements as we work together to advance the future of APPSA.

Warm regards,
Marilyn de Meyer: APPSA President

From The Editor

South Africa's healthcare system is in crisis - and the National Department of Health is doing nothing to address it. In fact, it appears to be doing the exact opposite.

In a series of written questions to Minister of Health, Dr Aaron Motsoaledi, Parliament's Health Portfolio Committee is seeking clarity on how his department spent the R1,778-billion that was meant to create 1 750 new healthcare positions but has not done what it was intended to do. The Minister has been asked to explain exactly how many doctors, nurses, and specialists were employed with this money, broken down by province, and why, despite this massive allocation, public hospitals remain dangerously understaffed. Instead of more doctors and nurses, the National Department of Health (NDoH) has actually reduced its headcount by 12,1% at a time when there are more than 27 000 vacancies nationwide, including over 2 000 doctors and nearly 17 000 nurses.

Take Inkosi Albert Luthuli Hospital in Durban as one example. This hospital is KwaZulu-Natal's only facility offering certain specialist services - particularly cardiac care - and yet the hospital is operating at 40% below surgical capacity due to frozen posts, severe ICU staff shortages, and critical shortages of surgical consumables and equipment. Daily surgery schedules have reportedly been cut by 60%, while children in need of ICU care are sometimes admitted too late for effective treatment because there are simply not enough nurses. And in the cardiac unit, there is only one cardiologist who is expected to see up to 60 patients per day.

This is a recipe for disaster. A catastrophe waiting to happen. It is not just a nursing crisis. It is a healthcare crisis of epic proportions.

But it is not just at tertiary healthcare level that the National and Provincial Departments of Health are failing. In Gauteng, Carletonville Hospital is facing another water crisis as Merafong Municipality has not paid its R1,4-billion water bill. As a result, Rand Water has again throttled water supply by as much as 40%. Noordheuwel Primary Healthcare Clinic had a river of sewage running through the grounds for eight months before the problem was solved. There was not one single working toilet for staff or patients. It was only resolved after countless newspaper articles, TikTok videos, Facebook posts and my pressure in the Gauteng Legislature forcing the Gauteng MEC of Health's hand to resolve the issue.

Add in suppliers not getting paid. Whether they are multi-nationals or township entrepreneurs, service providers to the Gauteng Department of Health (GDoH) were compromised when the GDoH failed to pay invoices valued at R5,110-billion within the stipulated 30-day period in Quarter 1 of the 2025/2026 financial year.

This is criminal to the loyal suppliers who depend on the 30-day payment agreement to employ staff, pay their suppliers and keep their doors open. This is criminal. Hard-working South Africans are battling to keep afloat, and both the national and provincial Departments of Health are killing businesses and patients ... Something needs to change - and fast.

Madeleine Hicklin
Editor

The Clock Is Ticking ...
The Elize Michau Honorary Lecture

By Dr Nelouise Geyer, NEA

Good afternoon Colleagues

Thank you for the invitation to do the Eliza Michau Honorary Lecture today. I feel particularly honoured as a non-theatre or peri-operative practitioner to be invited to deliver such a tribute to such an inspirational person.

What I am going to e addressing this afternoon is different from the rest of the other lectures you will hear this afternoon and will not be clinical information, but it is as important: it relates, rather, to the concepts of time and leadership. Time is strongly linked to leadership and leadership development. At the onset I want to remind all of us that all nurses play a leadership role wherever you are working - singly or in groups, and with patients, students, or colleagues.

Leadership and time are intertwined: the term 'Time Leadership' means that as leaders, we have to use time effectively to lead and influence others. We have to **own** our time to strategically manage the impact we have. Leadership requires leading with a vision, taking into consideration the impact this has on time on that vision. I think we all know the frustration of a manager or supervisor in charge of the team that cannot take decisions! But, in saying that, we must accept that the vision must be realistic to the era or time and environment in which we function which means that this person must stay updated of developments related to the work at hand.

If we search for scientific information on leadership and time, it is seen that limited research has been done on time and leadership. In research, it is described in terms of clock time, that is measurable, dividable, homogenous [each moment is the same], moving from the past to the future - not making provision for subjective experiences of time, for example, that we all experience time differently. And that is how we experience it as well as we rush through life.

It is often said that good leaders are born, but that is not really the case as good leaders are developed, even though some may demonstrate a natural inclination for leadership. We often hear about children at school displaying exceptional leadership ability, but it still requires hard work and continuous learning and development. As a result, anyone with the desire to become a leader can DEVELOP the skills and qualities to become a good quality leader. It is not related to a senior authoritative position you may be appointed in. But it is indeed the case that sometimes an opportunity crosses your path that you can grab and run with, that will contribute greatly to your leadership skills - serving on your professional society executive is one such opportunity where leadership skills can be developed in a safe space. You can find leaders at all levels of an organisation, institution or hospital, and my view still is that in under-graduate education, the leadership skills of student nurses should be increased.

Leadership development is a daily process, it is not a one-time event, and as a result, it requires continuous learning and growth. Great leaders cultivate a growth mindset, prioritise personal development, and are consistently focused on serving others. And that is why all nurses are leaders in their respective roles. This point needs to be emphasised, understood, re-inforced and appreciated by all of nurses and their managers on a continuous basis. Like respect, being seen as an outstanding leader is earned and develops over time. It takes time to build your reputation and you need to work on it on a daily basis - and it starts with doing what you get to do well.

As indicated earlier this means that you must remain well informed not only on your work, but also on boarder issues. When nursing regulations or policy documents like the NHI are circulated for comment, submissions are limited because - as nurses - we do not take the time to study those documents. It does not serve us well. We need to be more pro-active, more involved and more forthright in our actions. Having a broad knowledge base enable leaders to respond on the spot. There is no doubt that we make mistakes as leaders, but the important thing is to reflect on events and learn from mistakes.

Let's consider Ms Elize Michau's contributions - not only to nursing as a whole, but to APPSA and SATS (the South African Theatre Nurse Organisation) as it was called originally. Thanks to both Villi Pieterse and Marianne Oosthuizen for the information they passed on to me, I can share a brief snippet of the immense contribution Ms Michau had on this profession. The one thing that is abundantly clear, is that she never stopped studying and working to improve theatre or peri-operative nursing. She obtained further qualifications at Groote Schuur Hospital, Pretoria College of Nursing and Stellenbosch University.

At the then Cape Provincial Administration Hospital Department she was employed as a Nursing Inspector where she could establish strong networks. She also had the opportunity to attend a number of International Conferences, and this is where she was granted an opportunity to start building an international network of contacts to add to the local network of nurses she was beginning to establish. She grabbed these opportunities with both hands and soon she became a force to be reckoned with.

In 1978 Ms Michau was the first South African representative to attend the 'World Conference' in the Philippines where she read a paper on *Functions of Operating Theatre Personnel.* From this moment on, she played a crucial role in the establishment and professionalisation of theatre nursing in South Africa. She was a founding member of the Cape Operating Theatre Discussion Group, the way most professional societies are initiated, and she became the driving force to establish SATS in 1980, and was also instrumental in drafting the first SATS Constitution.

One of the most challenging tasks of professional societies is fundraising and Ms Elize Michau was a fundraiser *par excellence*. In 1987 the SATS Journal was born and today it is still keeping the peri-operative nurses informed of development, activities and studies around the globe. Keeping the Journal going is another challenging task for those professional societies who have one.

When she retired, Ms Michau obtained employment with MediClinic as a tutor. It was in this capacity where she continued her work to strengthen the specialty of peri-operative practice. During this time, she developed and got the Diploma in Operating Theatre Nursing Science accredited with Nursing Council. In 1988, the first six students were enrolled for the programme.

During all this time she kept track of the history of the organisation which can be seen in the photo albums of the Association and it is vital that this history be written down for future generations. There is much that can be learned by studying where one has come from - in order to plot the way forward to where one wants to go.

BUT WHAT IS OUR CONTRIBUTION?

So, to get back to time where we started. While all this information was captured in a one A4 page, it does not describe the detail, time and energy that went into all these activities taking place. It raises the question, are we writing up our leader's contribution to the profession? What is our responsibility to acknowledge the contributions of our leaders?

SR HENRIETTA STOCKDALE

In some instances, the acknowledgement of the contribution of many people in our midst is on a large scale. We see the honouring of Sr Henrietta Stockdale in Kimberley where her grave and a statue of her are next to the St Cyprian Chapel. She was instrumental in obtaining registration for nurses ensuring that South Africa was the first country in the world to register nurses. Inside the church there is a stained-glass window depicting Sr Henrietta, and her contribution is celebrated here on an annual basis with a memorial lecture.

AUSTRALIAN SERVICE NURSES

One of the most striking memorials I have seen is the one for Australian Service Nurses which includes the Bangka Island massacre. In 1942, on Bangka Island 22 Australian nurses were murdered by Japanese soldiers. The ship they were on was bombed and survivors, including 22 of the original 65

nurses, were taken to Bangka Island where they cared for the sick and injured. The Japanese shot and killed many of the prisoners ... and they then turned on the nurses. The nurses were ordered to walk into the sea and when they about waist deep in the water they were gunned down, Matron Irene Drummond's last word to the nurses as the marched into the sea was "Chin up girls. I am proud of you and love you all." Only one nurse, Vivian Bullwinkle, survived, although she was severely wounded.

A memorial with panels telling all of the Australian Service Nurses' contribution over the years was erected in their memory, and the memorial includes a statue of Vivian Bullwinkle. Emanating around her feet is a gentle watery surface inset with 22 stainless steel discs, representing the 22 women killed in the Bangka Island Massacre. The discs are arranged as a reflection of the main stars that would have been visible in the night sky on 16 February 1942 when the nurses were shot.

SO WHY IS IT IMPORTANT TO TAKE NOTE THAT THE CLOCK IS TICKING?

This bring us to the main question again: why is it important for us to take note that the clock is ticking when we are overwhelmed by life and work trying to get everything done?

In my mind, it is important for us to write down our stories - we all have stories to tell. But in particular we have to write up the contribution of our professional organisations and their leaders for those to who follow us. They need our stories to learn from our successes - and our failures - as we build strong organisations. It is only from acknowledging successes and failures that true growth really happens. And we need to inspire the generations that come after us.

Thank you for listening Colleagues - and enjoy the rest of the APPSA 2025 *Striving For Excellence* Conference

Dr Nelouise Geyer is a registered nurse-midwife, tutor and nurse administrator specialised in intensive care nursing. Her experience includes clinical nursing, education at University of Pretoria, professional officer during the transition of the South African Nursing Association to DENOSA, HIV & AIDS project manager at the Public Services International (PSI) and as the CEO of the Nursing Education.

She is a Sessional Lecturer at Wits University and serves on other professional societies, is an Editor-in-Chief of the International Journal of Africa Nursing Science (IJANS); and a Fellow of the Academy of Nursing of South Africa (fANSA).

She has published widely and has presented papers at local and international conferences.

The National Health Insurance: The Truth, The Whole Truth, And Nothing But The Truth

By Madeleine Hicklin, DA Spokesperson on Health in the Gauteng Provincial Legislature

BACKGROUND

Good afternoon ladies and gentleman and members of APPSA. I am honoured to be able to address you today on this the opening of the APPSA Congress of 2025 in which we are all striving for a *Time For Excellence.* Many of you know me - I have been the editor of the APPSA Journal and its predecessor, the SATS Journal, the APPSA Guidelines since 1999, and I count my blessings to be part of this wonderful organisation.

I want to state – at the outset – that while I stand here in my official capacity as the Democratic Alliance Spokesperson on Health in the Gauteng Provincial Legislature, the talk I am giving today is in no way political. Hence my title is *The National Health Insurance: The Truth, The Whole Truth, And Nothing But The Truth*. There is no political agenda at play. There is a HEALTH agenda on my mind – that of ensuring that quality healthcare is available for ALL the citizens of this great country of ours.

INTRODUCTION - SO WHAT IS THE NHI?

The NHI Bill was first introduced to the Parliamentary Portfolio Committee on Health in 2019. In our Parliamentary System, legislation is introduced via a Portfolio Committee in the National Assembly, it goes through a process discussion and evaluation – that includes both written and oral representation from ordinary South Africans in what is called public participation to gauge public opinion on the desirability or appetite for the piece of legislation in the general public. It is then deliberated and voted on and, if passed in Parliament, signed into Law – or assented to – by the President of the Republic of South Africa.

The NHI went through all of the above and there were many people and organisation who were in favour of the Bill in its current form – and an equal if not larger number who were against the Bill in its current form.

But I'm jumping the gun. Let's look at the NHI Bill. What did it seek to achieve? The objective of the NHI Bill was to provide universal access to quality healthcare for all South Africans as enshrined in the South African Constitution. The Constitution recognises healthcare as a fundamental human right. It states that `everyone has the right to have access to healthcare services … and the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of these rights, and no one may be refused emergency medical treatment.'[1]

The NHI Bill sought to achieve this by ensuring that:

- No one is deprived of the above mentioned rights because of their socio-economic status

- One public health fund is created with adequate resources to plan for and effectively meet the health needs of the entire population, not just for a selected few; and
- The ultimate goal is to achieve Universal Health Coverage (UHC).

I need to state categorically that **NO ONE** (in any of the deliberations or discussions) is AGAINST the concept of universal health coverage. It is just the means through which this is achieved that is in question.

The ideal behind NHI is that:

A) It would cover all South Africans – rich and poor – as well as all LEGAL long-term residents
B) There will be one pool of healthcare funding for everyone – public and private
C) When people visit our facilities, there would be NO FEES CHARGED because the NHI Fund would cover all the medical costs, much like medical aids do for their members
D) NHI would narrow the gap between rich and poor in terms of STANDARDS of care
E) South Africans will no longer be required to contribute directly to a medical aid to get quality healthcare. The NHI Fund would cover it.

BUT … and there is always a but. There are so many questions that we have to ask.

QUESTION ONE: **WHERE WOULD THE MONEY COME FROM TO FUND THE NHI FUND?** The answer is from Government[2]. And here is the but … But the Government has no money! Finance Minister Enoch Godongwana has admitted that the fiscus is depleted. All budgets – across all disciplines - have been cut. South Africa has no money to fund such as elaborate healthcare scheme. The only way funds could be generated for fund NHI would be through increasing taxes on an already shrinking tax base. It is estimated that the cost of each patient administered by the NHI will be R40 322, but no real costings have been undertaken by Government.

This will see large-scale emigration of fed-up tax payers who are already very heavily taxed as it stands. You saw the public reacted to the possibility of a VAT increase. Imagine having to be taxed say another 5% on your salary to cover the BILLIONS necessary to fund the NHI Fund. The South African Medical Association (SAMA) has confirmed that the implementation of NHI will see hundreds of doctors and nurses emigrate overseas because they know they will not be able to cope with the additional strain of an overburdened healthcare system that is under-resourced and one in which the infrastructure is already unable to cope.

The NHI Fund will also work as a SINGLE PURCHASER of healthcare services by pooling all the funds for strategic purchasing of healthcare services, medicines, health goods and related products from accredited and contracted healthcare service providers. How many people in this room trust this process? Do you remember the COVID-19 scandals of procurement money that was pooled to buy PPE that either was of such inferior quality or … simply never arrived? One pool of money to buy ALL the medicines, OR gowns, OR packs including sutures, instruments, implants, OR beds, linen, food …. The list is endless. There will also be an NHI Fund Board with a CEO and directors - who must be paid. They must develop a selection of health products and services to be procured - and at what central price on behalf of all users. This includes all essential medicines and essential equipment lists for the entire country. The possibilities for supply chain corruption on a scale never seen of before will be enormous.

QUESTION TWO: WHO WOULD BE COVERED UNDER THE NHI? South African citizens; permanent residents; refugees, prison inmates, certain categories of illegal foreigners (as determined by the Minister of Home Affairs and the Minister of Health), and all children. Foreigners visiting the country for any purpose must have travel insurance to receive any healthcare services. If no travel insurance is in place, only certain emergency medical services will be rendered or for services of a notifiable condition that could be of public concern.

But we all know how many of our state hospitals, PHCs and CHCs and Clinics treat undocumented foreign nationals who come to our facilities – often in dire need of medical care. Where will they go for help? You cannot (in all good conscience) turn a sick, injured or pregnant person away from a facility if they are in need of care. That would go against the Oath one takes as a healthcare professional. But our borders are porous. If you work in any of the abovementioned healthcare facilities you know that in the morning someone will present with an ID of a person say, from Malawi, and that afternoon, a different person will appear … Using the same ID. And they are both ill. Who do you choose to treat and who do you choose to not treat?

QUESTION THREE: OUR FACILITIES ARE BROKEN AND CANNOT COPE WITH THE CURRENT PATIENT LOADS AS THEY ARE AT PRESENT[3]. In order to qualify to be a PHC, CHC, or hospital sufficiently prepared to render quality healthcare to patients in line with the recommendations of the NHI, the facility has to meet the Ideal Clinics status. At present, only 55% of South Africa's public health facilities have Ideal Clinic Status - which means the facility conforms to good infrastructure, adequate staff, adequate medicines and supplies, good administrative processes and sufficient bulk supplies that use applicable clinic policies, protocols, and guidelines to ensure the provision of quality healthcare services to the community. Of the country's 3 477 clinics and hospitals, only 32% have achieved Platinum Status. Platinum status means they achieved 100% for non-negotiable vitals; more than 80% for the vitals category, and more than 70% in the essential and important categories. These are emergency trolleys restored daily or after each use; functional oxygen cylinders with pressure gauges in the resus/emergency rooms; and oxygen available in cylinders is above MINIMUM levels.

QUESTION FOUR: THE OFFICE OF HEALTH STANDARDS COMPLIANCE (OHSC) has confirmed it is struggling to inspect and accredit facilities in a timely manner and will not be able to accredit all the healthcare providers for the purposes of the NHI. Only the Western Cape and Gauteng have scored sufficiently to become accredited service providers should the NHI come into operation.

QUESTION FIVE: THE MINISTER OF HEALTH WILL BE THE ONLY ONE WHO WILL HAVE POWERS to decide on the day-to-day running of the NHI Fund, and on health regulations. He will (in effect) be running the NHI alone rather than having oversight responsibilities. Hospitals - whether individual, regional or district - will have no autonomy and decision-making powers (including control over financial management, human resource management, minor infrastructure repairs, technology paths and patters, planning and full revenue retention. This includes the entire hospital budget. ALL OF THIS WILL BE DELEGATED AND CONTROLLED BY NATIONAL GOVERNMENT.

QUESTION SIX: THERE WILL BE NO MORE MEDICAL AID SCHEMES. The NHI will eventually remove the option of choice - whether to be a part of a medical aid scheme or not. This affects a person's right to choose, their right to freedom of association and the right to access good, appropriate and quality medical care. At present, people with a medical aid have a choice of medical service providers or hospitals. This means an almost guaranteed access to swift, immediate medical attention - especially in the case of an emergency. If NHI is enacted and there is a delay in being able to provide patients with immediate, high-quality medical treatment, this would be a breach of our Constitutional rights and potentially create a legal nightmare for the State.

Medical Aid Schemes as they stand, will only be able to offer complementary cover to services NOT REIMBURSABLE BY THE FUND[4]. And a Certificate of Need (CON) - declared UNCONSTITUTIONAL in July 2024 - will still become mandatory for the recruitment and placement of service providers. In July 2024, the High Court in Pretoria declared sections 36 to 40 of the National Health Act to be unconstitutional and should be struck down. These sections state that healthcare professionals and healthcare facilities must apply to the director-general of health for a CON and criminalise the provision of health services or the operation of a health facility in a particular area without such authorisation. The CON has two important objectives: Regulate the quality and standard of healthcare provided in a particular facility. Determine whether an intention to establish or extend a facility, or increase the number of beds, or install equipment is appropriate for a particular area. This will entrench a lack of transparency in addressing personnel, skills shortages and the real healthcare needs of communities - especially in the most remote areas of this country.

QUESTION SEVEN: EVERY CITIZEN WILL HAVE TO REGISTER FOR THE NHI ONLINE. How many people do not have access to the internet? How many people - in rural communities - understand how to upload their biometrics onto the system or have the necessary equipment to do this in a timeous and efficient manner? South Africa has one of the highest data cost rates in the world. While recent developments have seen a reduction by the Minister of Communications to reduce import duties on Smartphones under R2 500.00, how many people have Smartphones or can afford the data charges to upload all this information in order to register for NHI?

QUESTION EIGHT: NO RECENT FEASIBILITY STUDIES HAVE BEEN CONDUCTED REGARDING THE FINANCIAL IMPACT OF THE NHI post the COVID-19 pandemic. The majority of hospital are so underfunded in terms of infrastructure maintenance and development, the buying of new equipment, the lack of medicines due to stock-outs … NHI will not solve those problems, they will only serve to exacerbate them. South Africa has a massive skills shortage. Many believe it to be in excess of 30 000 people - both doctors and nursing professionals. APPSA can attest to the diminishing pool of peri-operative practitioners who are constantly called to leave South Africa for greener pastures and greater pay in places like Dubai, the UK and Ireland to name a few.

The placement of new community service doctors and nurses is chaotic at best - if it happens at all. The current Minister of Health, Dr Aaron Motsoaledi, - knowing we face such a dire need - has agreed to fund 1 500 new posts for doctors, countrywide. That is a drop in the ocean that will not even begin to address

the challenges this country has. And in the meantime, we have qualified doctors, nurses, physiotherapists and other allied healthcare practitioners sitting at home without a job - because there is no money to pay them

QUESTION NINE: MEDICO-LEGAL CLAIMS[5]**.** Across the country, the costs associated with medico-legal claims against the provincial and national departments of health run in to trillions of rand. In Gauteng alone, the current financial year's medico-legal bill stood at R14-billion until 803 cases were declared dormant in December 2024. This reduced the bill by almost R7-billion. But these accruals have to be paid, these patients (the majority of whom are cerebral palsy patients) have to be compensated. And medico-legal claims will not decrease, they will skyrocket as an overburdened healthcare systems gets pushed harder, with staff working longer and longer hours. The system will collapse

QUESTION TEN: WHAT CONSTITUTES AN EMERGENCY? The NHI Bill does not properly define what an emergency is - and while it maintains that only certain categories of illegal foreign nationals can only be treated in cases of an emergency … the exact nature of what presents as an emergency is not contained in the Bill. As a result no information is given on whether a person can be treated if no medical 'emergency' exists. There is also no list of what healthcare products and procedures will be covered under the NHI. No information has been forthcoming on exactly what healthcare products, services and procedures will be covered or available under the provisions of the NHI.

QUESTION ELEVEN: WHAT IS THE REFERRAL PATH FOR A PATIENT? Who is the first person to assess the patient? Is it a clinic, a CHC, a PHC or their nearest facility? And if the patient doesn't know the referral pathway and goes directly to a hospital, will they be seen and will their medical needs be catered to, or will they be referred back to a clinic, CHC or PHC? There is a dramatic paucity of information on this - and many other aspects of the NHI. In fact, much of the Bill is shrouded in mystery and a complete lack of transparency for both service providers and consumers of healthcare.

QUESTION TWELVE: WHAT CONSEQUENCE MANAGEMENT IS THERE FOR THOSE WHO COMMIT ACTS OF THEFT OR CORRUPTION[6] when the pool of money for supply chain is so vast - and only the Minister is in final control of the purse strings? Who is held accountable if suppliers are not paid, paid late - or not at all? Only the Western Cape and Gauteng entities and governments (to an extent) have been known to pay suppliers within 30 days. Carletonville District Hospital recently had no water because the Merafong Municipality had not paid Rand Water R1.6-billion. The OR Complex and maternity units had to close, there were no toilet facilities for in-patients, out-patients or staff. Nurses were forced to carry buckets of water from a water tanker up five flights of stairs wards to try and assists patients with basic toilet and washing needs in addition to their healthcare duties.

QUESTION THIRTEEN: IS THERE A GUARANTEE OF QUALITY OF CARE? Millions of people will be forced to give up their private healthcare/medical aid and be forced to use facilities which we know are

overcrowded, often in a state of disrepair and which lack maintenance and staff. Many of these facilities do not - as it stands today - comply with the prerequisites for the NHI in terms of Ideal Clinic Status, infrastructure readiness or waiting times for seeing patients. How will adding millions of additional patients impact this situation and the quality of care received by patients?

Patient waiting times in PHCs, CHCs, and hospitals often exceed eight hours for non-emergency cases. We know of patients 'admitted' to an emergency unit who sleep on the floor for two or three days before being properly evaluated and sent to a ward. How will adding millions more people affect patient outcomes?

QUESTION FOURTEEN: PART OF THE NHI PROCESS INCLUDES A COMPLAINTS PROCEDURE AND AN APPEALS TRIBUNAL. The Minister of Health is part of both processes - stripping them of any independence and reinforcing the Minister's 'hands-on', day-to-day running of the NHI Fund. This makes a mockery of the Minister's position - which should be one of devising policy and playing an oversight role over the entities which are the different divisions within the Health Department.

IN CONCLUSION:
The NHI Bill gives unrealistic powers to a Minister of Health - including allowing the Minister the discretion on how to disperse funds. That is the responsibility of the National Treasury and (in terms of the Constitution) can only be done through what is known as a Money Bill, controlled by the Finance Minister.

From the public participation process that covered both oral and written presentations, there was grave concern expressed as to the Constitutionality of the NHI Bill and the many concerns I have listed above – and yet on 15 May 2025, President Cyril Ramaphosa signed the Bill into law.

On 06 May 2025, the Board of Health Funders (BHF) and the South African Private Practitioners Forum were given the green light to challenge the President's signing of the legislation mere days before last year's National General Election[7]. The Gauteng High Court heard that the President assented to the legislation despite the objections and concerns over funding raised during the parliamentary process, and said the President's decision to sign the Act into law was 'reviewable'. The BHF, which represents private medical schemes, appealed to the President in December 2023, soon after Parliament passed the bill, to reconsider implementing it, because it believes it to be financially impractical to implement.

Judge Twala said: It is my respectful view that this Court has the necessary jurisdiction to adjudicate this case for the conduct of the President complained of does not involve sensitive political issues of political-laden nor does it implicate the separation of powers." The just has given the President 10 calendar days to furnish the Court with the record of his decision. That 10 days is up , but as yet, we have not been furnished with any decisions.

We wait with baited breath for the outcome.

I thank you.

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Madeleine Hicklin is the Democratic Alliance Spokesperson on Health and Finance in the Gauteng Provincial Legislature. She was a Member of Parliament between 2019 and 2024, serving as the Democratic Alliance Shadow Deputy Minister of Health from June 2023 to June 2024. She is the Editor and Business Manager of the APPSA Journal and all APPSA Guidelines, a position she has held since 1999.


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Debriefing In The OR - Creating Psychological Safety

By Paediatric Surgeon, Dr Yentl Gamiet

Welcome everyone. I am Dr Yentl Gamiet - a paediatric surgeon now in private practice but who has worked in numerous large hospitals including Chris Hani Baragwanath where I did my surgical training. Today, I'm excited to talk about the importance of debriefing in the OR. Debriefing isn't just a formality; it's a crucial part of our practice that can significantly enhance our effectiveness and well-being.

Let's take a moment to reflect on a powerful quote by Bessel A. van der Kolk: "As long as we feel safely held in the hearts and minds of the people who love us, we will climb mountains and cross deserts and stay up all night to finish projects." This touches on the essence of support and emotional safety. In our high-stakes environments, such as the OR, this sense of being held can be crucial for our well-being and performance.

As we delve deeper into our discussions today, let's remember the human aspect of our work. It's not just about procedures or protocols; it's about the people behind them. Remember, the emotional support we provide to each other can empower us to overcome even the toughest challenges. Now, let's explore how this relates to the current state of our nursing professionals in South Africa.

As we dive into the current state of our nursing workforce, let's take a moment to reflect on a staggering statistic: **40% of South African nurses report symptoms of PTSD**. This insight comes from a study by Engelbrecht, Heunis, and Kigozi, published in 2021, which sheds light on the mental health challenges faced by nurses during the second wave of the COVID-19 pandemic. That is a staggering statistic. But, why is this so critical? It highlights the profound impact of trauma on our healthcare professionals, especially in such a high-stress environment like the OR.

It's not just about numbers; it's about people - our caregivers who are risking their own mental well-being to care for others. It's also traumatic to live in South Africa with our intense GBV stats, and acknowledging that the majority of the workforce are women.

My own PTSD manifested around the birth of my first child. I had consuming intrusive thoughts after seeing a patient who had been rescued from a trafficking situation. The social worker on the case had a stroke ... I still haven't spoken to any of my colleagues who were working with me at the time about that incident. But let me repeat myself: **40% of South African nurses report symptoms of burnout.**

First, we must understand that burnout isn't merely about being tired. It's a complex response to sustained stress that can lead to significant emotional and physical exhaustion. There are so many definitions and reasons and I think it is still quite poorly understood. Some have postulated that the *sin*

of acedia or *sloth* ... was actually a word for burnout. The symptoms used to present at midday and some people think that the phrase 'the destruction that wastes at noonday' are symptoms of burnout.

18th Century monks confessed that it was also accompanied by an unexplained urge to leave. So while Irene Owen's presentation highlighted the number of nurses we will lose to retirement, there is another vitally important question we have to ask ourselves: how many of our nurses are we losing to burnout?

A study by Khamisa and colleagues highlights the situation during the peak of the COVID-19 pandemic, and shows us how crucial it is to address these issues within our healthcare system. My journey into simulation theory and its effects on psychological safety was such a beautiful accident.

The Red Cross Department of Anaesthesia (as part of the UCT Department of Peri-operative Medicine) host a Management of Emergencies in Paediatric Anaesthesia course for their registrars, which include registrars from other African countries. My role was to act as the surgeon in these case simulations and I'm sure you can tell that I have a tendency for the dramatic so I loved it. But the vital part was that after the simulation came the debrief. The first debrief. You have to get the tension/emotion/debrief just right - but I couldn't strike the right balance. I tried to make people laugh, because I was so awkward with my own emotions.

But with practice, comes ease and relaxation and the more I did the debriefing, the more I felt heard and seen, and healed. These folks are ninja debriefers and I have done a few courses with them. There is a very strong message here: debriefing for simulation is a very specific thing and may not be the same thing as a 'hot debrief' disclaimer ... BUT I am a 'whole specialist' who studied for a hundred thousand years and have not found another place that I can learn this skill. So I circled back to psychological safety - thats what that Bessel van der Kolk quote at the beginning of the talk is all about.

Debriefing is another way of fostering the creation of psychological safety.

I had a rude awakening in many aspects as my attempts to introduce simulation to my nurses (although always enthusiastic at the beginning) always fizzles out because its not protected time sanctioned from on high. And the bottom line ... is the bottom line. And this story of vicarious liability can turn this sacred safe moment into a witchhunt..

So, we have work to do. We don't want critical incidents to happen - the same way we don't want poly-trauma to happen to people. But as emergency room and trauma staff, we rehearse and drill the ABC's into our consciousness. We should be equipping ourselves with the same zeal for critical incident debriefing. The PEARLS tool (Promoting Excellence and Reflective Learning in Simulation) are excellent - and we should be using them. Often. There are other tools, but this one is accessible and free, and you can download and print it back to back on an A6 piece of cardboard and it is very clear.

So back to the beginning. There are learning opportunities everywhere. The founding CEO of an international human rights organisation was in attendance at the end of one of the retreats I ran when I once spoke about debriefing as a sort of gentle re-entry into real life. She was so disgusted that we didn't debrief every week as her people did ... I then found myself trying to explain that it's not the same thing.

What she was referring to was a kind of 'check-in', not a debrief in the sense that we were talking about. This debriefing can also be used as a tool to improve team dynamics. If used correctly, and regularly, it can become a very short, habitual part of the work week between manager and staff.

If you do something often and constantly - it's easier to incorporate it into the culture of the entire organisation. To everyone's benefit. Like doing short, daily workouts or just drinking more water and flossing - as opposed to starting a new expensive programme but this must be on management's agenda, otherwise it dies. There are other interventions like the Schwarz Rounds that may bring closure, psychological safety and maybe even wellness back into the profession, but again, it has to be on the management agenda in a meaningful and strategic way or it will be doomed to failure.

Dr Yentl Gamiet is a specialist paediatric surgeon in private practice and a part time lecturer in the Department of Paediatric Surgery at Sefako Makgatho University in East London.

Her social media platform, Dr Good Poo, promotes good gut health for families as well as grants access to paediatric surgical care through educational resources. Her 'extra-curricular' activities include creating events and safe spaces for healthcare professionals to network and 'decompress'. Another passion is public speaking on her favourite topic - gut health, systems improvement and preventative care.

Steam Sterilisation, What Is The Difference Between Terminal And Immediate-Use Steam Sterilisation/Flash Sterilisation

By Xana Jardien, Clinical Specialist in decontamination at SafMed

BACKGROUND

Before any surgical instruments, packs or devices can be used on a patient, they need to be thoroughly cleaned, checked, packed, and sterilised. Sterilisation is extremely important because it gets rid of all micro-organisms, like bacteria and viruses, which could cause infections if left behind.

Sterilisation is defined as a process that renders an object free from viable micro-organisms like viruses and bacteria. As steam makes contact with the cold surface in the autoclave, it condenses and forms water. Thermal energy is transferred from the steam to micro-organisms, and it coagulates the protein in the cells of micro-organisms which kills the micro-organism (denaturation). Basically, sterilisation means making sure something is completely free of any living germs. After a proper sterilisation process, the chance of even one micro-organism being left on an item is less than one in a million.

THE THREE PHASES OF STERILISATION

Steam sterilisation takes place inside a steam steriliser also known as an autoclave.

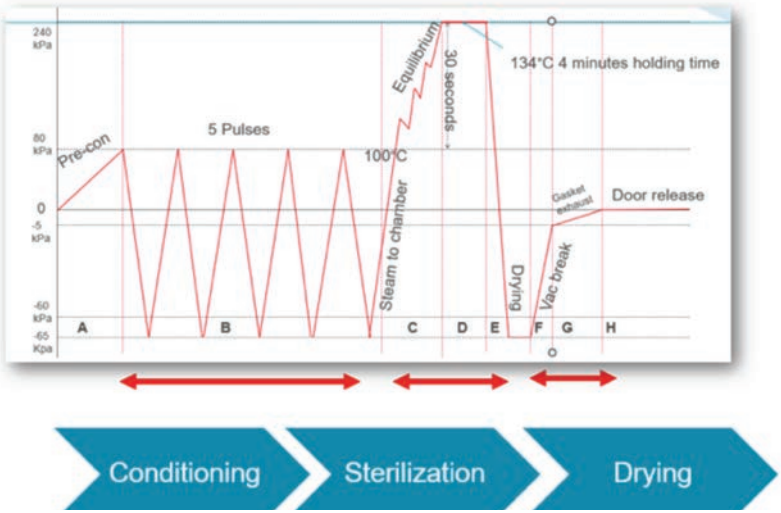

Image 1: Example of a Type B Steam Sterilisation Cycle (created by Marko Marais)

Conditioning Phase: In this first step (especially in what is called a Type B cycle), the machine removes the air from the chamber by pulling it out and then pumping in steam. This is done a few times to make sure all the air is gone, and the right temperature and pressure are reached.

Sterilisation Phase: Once everything's set, the items inside are exposed to steam for a certain amount of time. This is what actually kills off any germs or micro-organisms.

Drying Phase: Finally, the chamber is brought back to normal pressure. Then, either air is circulated through the chamber, or a strong vacuum is used to dry off the items - like packs, tools, or devices - so they are ready to use. This process is depicted in the diagram below.

TERMINAL STERILISATION

Terminal sterilisation is the process of sterilising medical instruments, devices, after they have been packaged or sealed in their final containers. This ensures that the product remains sterile until it is opened for use.

This means the packs, sets and devices can be safely transported and stored until they are required. Terminal sterilisation is the preferred method of sterilisation. The images below demonstrate how air is actively removed, and steam is pulsed into a Type B sterilisation cycle, thereby ensuring thorough steam penetration.

Image 2: Active air removal (pack expands)

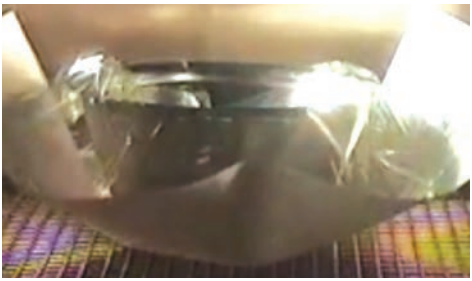

Image 3: Pulse of steam (pack collapses)

IMMEDIATE-USE STEAM STERILISATION CYCLE

An immediate-use steam sterilisation cycle (IUSS) is often referred to as gravity displacement cycle. This is a 'Type N sterilisation cycle', and in this cycle air is not actively removed. The steam merely displaces the air in the chamber and the force of gravity causes the heavier air to exit the chamber via the steriliser drain.

Because of this process, the items processed in an IUSS cycle cannot be packed in a sterile barrier system, as there is no active air removal, or enough steam pressure to penetrate through a sterile barrier system (a wrap, for example). This fast or 'flash' type of cycle was developed to use in emergency situations, like when an instrument was dropped on the floor, during a surgical procedure. Items

processed in an IUSS cycle are hot and wet at the end of the cycle and still need to be transferred aseptically (safely) to the sterile field. As the items are not wrapped in a sterile barrier system, they are vulnerable to contamination.

In the World Health Organisations (WHO) global guidelines for the prevention of surgical site infection's (SSIs) it is said that gravity displacement sterilisation cycles:

- Have many drawbacks as, they are less reliable than pre-vacuum (Type B) sterilisers
- Are not suitable for medical devices with lumens
- Are not suitable for porous devices
- Are not suitable for wrapped devices
- Should never be used to replace the lack of instruments

If IUSS cycle must be used there are some important steps that need to be followed, which includes:

- Having a valid reason for using an IUSS cycle
- Having a structured standard operating procedure (SOP) to follow when using IUSS
- Thoroughly cleaning devices with enzymatic detergent before sterilisation
- Checking the manufacturers device instructions for use to check if the items can undergo IUSS
- Keeping a logbook to record:
  - Why IUSS was used
  - The date and time the item was sterilized
  - Steriliser that was used and the sterilisation cycle number
  - The name of the operator (who sterilized the device)
- Never using IUSS on device exposed to vCJD
- Being able to track the device to the patient it was used on
- Placing an appropriate in pack chemical in the set

Research has shown that the convenience of IUSS has led to abuse of the process, and the stress associated with the urgent need of the devices leads to reprocessing steps being skipped. There is documented evidence of patients sustaining partial and full thickness burns when IUSS was used incorrectly, because of skin contact with hot devices.

In one hospital in the USA, it was noted that when using IUSS cycles, there was valid reason in only 10% of cases. In a breaking news headline, it was stated that a patient was awarded $20-millionin a medical malpractice lawsuit, in an incident where IUSS was used to sterilise the implants (plates) inserted into his legs. The hospital was found to be negligent in that the plates were not properly sterilised prior to surgery. It also contended that there was a 'breach of sterility' at the hospital that breach had not been disclosed to the patient.

In conclusion, there are many differences between terminal and immediate-use steam sterilisation. Immediate-use steam sterilisation, previously know as flash sterilisation, is not the preferred method of sterilisation for devices and surgical instruments used on patients in the operating room.

This image depicts the incorrect use of IUSS.

Type	Terminal Sterilization	IUSS (previously called Flash)
Definition	Instruments that are cleaned, wrapped, sterilized and stored for later use	Instruments that are cleaned, not wrapped, are sterilized and used immediately after sterilization
Cleaning	Must be cleaned, dried, inspected as normal	Must be cleaned, dried, inspected as normal
Intended use	**Preferred** method of sterilization	For **emergency** situations **only** **And only if in MIFU**
Sterile Barrier	Wrap, container, plastic paper peel pouch	No sterile barrier system

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Xana Jardine is the current chairperson of the CSSD Forums of South Africa (CFSA) and represents CFSA at the World Federation for Hospital Sterilization Services (WFHSS); on the South Africa Bureau of Standards' Technical Committee TC 1039 (medical devices and sterilization of healthcare products) and at the International Organisation for Standards ISO TC 198 WG 7. She is also a member of the Central Sterilization Club in the UK.

HOSPI STERILIZERS JSD600 (600L) Autoclave

The Hospi Sterilizers JSD600 Autoclave is a 600 litre, trans atmospheric steam sterilizer available in a single door and double door configuration. Manufactured in South Africa, the Hospi Sterilizers JSD600 offers a dedicated Bowie-Dick and vacuum leak test cycle as well as water saving functionality with the onboard water & energy saving system which utilizes recycled water. The Hospi Sterilizers JSD600 uses a liquid ring vacuum pump to create a vacuum.

Features:

- High pressure, high vacuum steam sterilizer.
- Chamber Size - 660 x 660 x 1380.
- Sterilizes at both 121°C and 134°C.
- Dedicated Bowie & Dick test cycle.
- Vacuum leak test cycle - To test pressure vessel integrity.
- Electronic control system - PLC with touch screen.
- Water saving tank on-board - Recycled water.
- Displays cycle progress information.
- Printing capability.
- Five sterilization cycles to choose from:
    - Packs - 134 degrees
    - Flash - 134 degrees
    - Liquids - 121 degrees
    - Rubbers - 121 degrees
    - Containers - 134 degrees

Critical Shortages Of Peri-Operative Practitioners

By Irene Owens, RN

BACKGROUND

Millennials in peri-operative nursing bring unique strengths yet face distinct challenges. Peri-operative nursing relies on knowledge, skills, habits (good and bad) handed down from generation to generation. Thus, creating the peri-operative practitioners we know today. Orientation in the peri-operative environment is one of the most critical tools in producing the next generation of peri-operative practitioners.

Imagine a bridge with weak, outdated infrastructure, limited resources for renewal, and further development. What do you think the future of the bridge - and those making use of it on a daily basis - would be? The bridge represents our patients journey through the peri-operative environment. Patients in South Africa cross the peri-operative environment with blind faith that they would be returned to their former state of good health.

As we began our training, we took an oath to advocate, protect and be the voice of those who too often have none, or who cannot speak for themselves at that point in time. We took an oath *To Do No Harm.*

We are facing an age where many qualified and experienced peri-operative practitioners - many of our colleagues - are fast approaching retirement age. According to SANC statistics published in 2012, the ratio per population to qualified registered peri-operative practitioners was 22 143:1. The SANC statistics in 2022 declared a ratio of 16 028:1. These alarming statistics do not take into consideration the number of Qualified Peri-operative Practitioners not practicing in the field of peri-operative nursing nor does it account for those peri-operative practitioners who are based outside South Africa out of choice, yet still remain registered with SANC.

It merely shows that numbers matter more than ever, especially in the fast, evolving specialised field of peri-operative nursing. Sadly, however, I predict our numbers to significantly stagnate before we see an increase or a decrease in qualified peri-operative practitioners in South Africa. Both these scenarios can have serious implications for the future of peri-operative practice in this country - not only for the profession, but for the recipients of our care.

The current requirement of admission to tertiary post-graduate diploma in South Africa leading to qualification in peri-operative nursing requires midwifery be included in the curriculum. I predict that this requirement will critically influence the rate and number of qualified peri-operative practitioners who enter the profession, and I am terribly concerned. The reason is as follows: Private healthcare institutions, for example, produce numerous much needed Registered Nurses (RN) without any post-basic qualification.

If a RN without midwifery is employed in the peri-operative environment, receives effective orientation, in-service training, adequate time to grasp and fully comprehend complex processes and concepts in the peri-operative environment that will lead to their being competent in the peri-operative practitioner space, it will significantly increase the pool of people we can attract and retain in an independent practice.

In my humble opinion, this will facilitate that we create a pool of brilliant peri-operative practitioners without post-basic qualifications, able to work in both the private and public sectors. This will, firstly, increase the pool of talent we are able to draw from, but it will also increase the attraction of young talent to our profession. As human beings we crave personal, professional and financial growth to secure a future for ourselves and the generations who follow.

As it stands at the moment, the probability of acquiring a qualification in peri-operative practice - for those who crave growth in the field - that person must first enrol in post-graduate studies leading to a qualification in midwifery. This has resulted in the potential loss of independent peri-operative practitioners with competence and experience and, in many cases, further decreasing the availability of peri-operative practitioners. The financial implication for a peri-operative practitioner to leave the peri-operative environment to obtain midwifery is immense. In many cases relocation is required, deepening the financial burden. Once the midwifery qualification is completed, the peri-operative studies are re-entered. An experienced peri-operative practitioner and midwife will now be allowed entry to post-graduate studies in peri-operative practice, leading to the necessary qualifications.

The Department of Health has published a report on Nursing workforce shortages in 2022, using surveys conducted by a variety of organisations. The report states that the supply of nurses is expected to decrease, and makes specific reference to 'an aging workforce'. The rate at which South Africa can produce the next generation of qualified peri-operative practitioner's compared to the rate of peri-operative practitioners fast approaching retirement age is alarming.

According to SANC, the age distribution of RNs between the ages of 50 and 69 as the end of December 2011 contributed 46% of RNs, compared to December 2022 where the age distribution of RNs between the ages of 50 and 69 contributed 47% of the total RN workforce.

For us as qualified and experienced peri-operative practitioners to mitigate critical shortages in peri-operative practitioners, we need to reflect on the heritage of the practice. Generation after generation of nurse practitioners unconsciously leave impressions, practices and unresolved challenges to the next generation - passed down like family heirlooms. Orientation is often seen as a process of introduction to a new working environment and, too often in my experience as a millennial-qualified, experienced peri-operative practitioner, overlooked by others as 'mere onboarding'.

The reality is that if unaddressed, this crisis will deepen; qualified and experienced peri-operative practitioners with vast knowledge and skill will retire in the very near future, leaving the younger generation to take the torch ... and run with it. As peri-operative practitioners, we must willingly forge the way forward. The individual decision to do what is morally, ethically and professionally correct may sometimes be heavy. As a generation, we must heed the call, use any tools at our disposal and available, and strive to achieve the best each of us has to offer.

Many challenges in peri-operative nursing practices can be addressed at the core - the core being our practice and how we mend broken bridges. This can only be achieved through effective, evidence-based orientation. In time to come, this will become critical in producing safe peri-operative practitioners.

And so the challenge remains: make the choice. Make the right choice. Choose to make a positive impact on our profession. Choose to make a positive impact in our specialised and highly-technical field.

The power is in YOUR hands. The generation of today moulds the generation of tomorrow. Use it wisely.

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Irene Owen's nursing journey began in 2009 when she enrolled as a first-year student. 2015 saw her qualify as a registered nurse and in 2016 she graduated with a post-basic operating room nursing qualification.

She has been the EN of the Vereeniging Mediclinic; RN, OT at Panorama Mediclinic; Night Charge OT at Cape Gate Mediclinic until her relocation to East London in 2020 where she took up a post in ICU at St Dominic Hospital during COVID and St James' Hospital.

In 2023 she qualified as an infection prevention specialist – and is currently an orthopaedic senior RN and IPS at St Dominic Hospital.

Follow The Path Of Infection: HAIs And SSIs

By Ina Buitenbos, RN, Getinge Certified Trainer

INTRODUCTION

There is a high overall burden of hospital-acquired infections (HAI) in SA which is associated with a substantial mortality rate. The most common HAI reported is surgical site infection (SSI) although significant regional variation was noted. There is an urgent need to improve infection prevention and control, to improve patient safety, and our results suggest that there is a urgent need to target these efforts.

While advances have been made in infection control practices, including improved operating room ventilation, sterilisation methods, barriers, surgical technique, and availability of anti-microbial prophylaxis, SSIs remain a substantial cause of morbidity, prolonged hospitalisation, and mortality. It is reported that SSI account for 20% of all HAIs and is associated to a twofold-to 11-fold increase in the risk of mortality with 75% of SSI-associated deaths directly attributable to the SSI.

SSI is the most costly HAI type with an estimated annual cost of $3,3-billion, and extends hospital length of stay by 9,7 days, with costs of hospitalisation estimated to have increased by more than $20 000 per admission.

Let's use the National Institute for Health and Care Excellence clinical guideline (NG125) as the benchmark standard. The primary objective was to establish a baseline incidence of SSI. This was a prospective and observational clinical audit undertaken in a University Hospital in South Africa. In this study, 37 participants who had surgical procedures were recruited and monitored telephonically post-discharge for a period of 30 days. The composite compliance rate to the process indicators was 39,86% (95% Confidence Interval). **The incidence rate of SSI was 14,81%.** The resection of head and neck malignancy contributed majority of the SSI cases (50%). Five organ/space SSI cases were detected with a mortality rate of 25%.

The higher SSI rates may be associated with the lapses in the infection control practices.

For example, the lack of proper process:

- Decontamination process
- Aseptic technique
- Structured approach to wound management

The main recommendation was the development of evidence-based SSI preventative strategies that are applicable to surgery procedures to reduce SSIs.

An observational study at a major South African teaching hospital report on bacterial contaminants identified instruments used for surgical procedures in this teaching hospital. In total, 207 pre-sterilised surgical instruments and instrument parts used at three units

- General surgical theatre
- Gastro-intestinal (GI) endoscopy theatre
- Urology endoscopy (uro-endoscopy) theatre

Instruments within these surgical departments were randomly sampled and examined for bacterial contamination. Bacteria isolates were identified, and their anti-microbial susceptibility patterns were determined.

The following bacteria isolates that were identified included:

- *Citrobacter spp., freundii, Bacillus cereus*
- *Staphylococcus hominis*
- *Staphylococcus aureus*

Bacillus cereus was the most predominant bacteria isolated (30/61, 49.1%), and *Staphylococcus hominis* the least (1/61, 1.6%). In terms of the number of isolates from the three units examined, the uro-endoscopy unit recorded the highest followed by the general surgical theatre and the GI endoscopy. However, there was no association between the various units and bacteria isolated, and no significant difference between the number of isolates among the various units ($p = 0.9467$, $\chi 2 = 0.1095$).

In this study, even though colony-forming units (CFU) per device or device part counted was less than 20, bacteria isolated from the instruments used for a surgical procedure is of great concern considering that the setting of the study is a major teaching hospital. Multi-drug resistance was observed in almost all the isolated bacteria.

This is even more reason to revisit with full detailed attention to the entire decontamination process in CSSD.

THE JOURNEY OF A SURGICAL INSTRUMENT SET: FROM USE TO RE-USE

Let's start with a few examples of an instrument that are very difficult to assemble/handle at the operating field and why.

Laparoscopic Instruments:
These instruments, used in MIS, have delicate components and microscopic cavities, posing challenges for handling and maintenance

Micro-Surgical Instruments:
Instruments used in micro-surgery (for example, intraocular surgery) are extremely tiny and delicate, requiring specialised skills and techniques for proper handling and reprocessing

Flexible Endoscopes and Reamers:
These instruments have complex designs with long, narrow channels, bends, and heat/chemical-sensitive components, making them challenging to clean and sterilise

Needle Holders:
These are essential for holding and manipulating surgical needles, and their failure can significantly impact the surgical procedure
Forceps and Clamps:
These instruments are used for grasping, holding, and manipulating tissues and can be challenging to use, especially in complex situations
Complex Table-Mounted Retractors:
Instruments like the Omni tract retractor and Bookwalter retractors, used in large abdominal operations, can be complex to handle and adjust during surgery
Artery Clips:
These clips, used to temporarily occlude blood vessels, can sometimes come off in difficult locations, and issues with their ratcheting mechanisms

THE DECONTAMINATION PROCESS

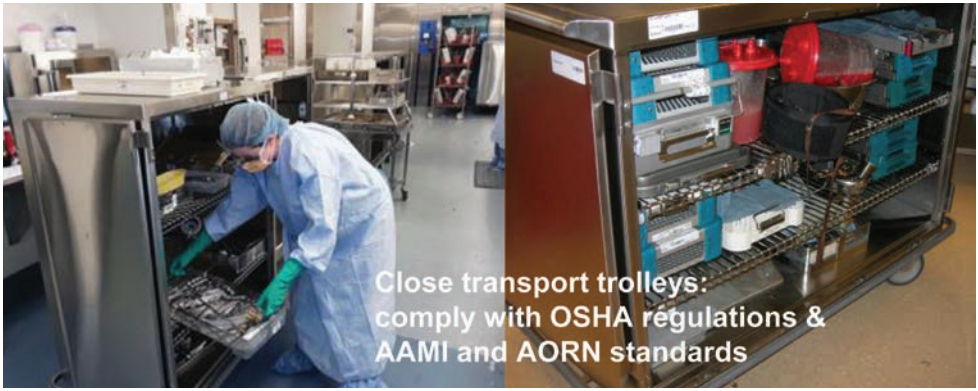
The decontamination of medical devices plays an important role in the prevention of healthcare-associated infections (HAIs). It includes cleaning, disinfection and/or sterilisation. The processes involved in decontamination are complex, require specific infrastructure and equipment, and involve several sequential steps that need to be performed correctly - from device collection and receipt by the decontamination unit to processing, storage and distribution throughout the facility.

In addition, quality control procedures (such as validation) at each step of the decontamination process are **of the utmost importance** to ensure the correct functioning of the equipment and processes.

But, where does the cleaning process begin? AT THE POINT OF USE - IN THE OR. Dried blood is very difficult to clean. Instruments that are treated in the OR are easier to clean when they arrive in Central Sterilisation Services Department (CSSD). Pre-treatment foam is a water-based, ready-to-use spray designed to be applied to medical devices immediately after use. Its primary function is to prevent the drying of surgical soils and blood, which can make them harder to remove later. This helps to improve the effectiveness of the cleaning process and protects instruments from corrosion.

TRANSPORTATION OF INSTRUMENTS

Only use closed-style transport trolleys: these comply with OSHA regulations and AAMI and AORN standards. In an OR,closed-style instrument transport trolleys are generally preferred to ensure the safe and sterile transport of surgical instruments. These trolleys minimise the risk of contamination and direct or indirect contact transmission of micro-organisms. They are often designed with multiple shelves, handles, and robust wheels for ease of movement and manoeuvrability.



CSSD BEST PRACTICES

Decontamination

Staff should wear appropriate PPE when handling contaminated items. Examples of PPE include:

- Hair cover
- Face mask
- Face shield or eye goggles
- Utility gloves
- Fluid resistant covering with sleeves

Staff should wash below the water surface with manual cleaning, to ensure optimal detergent time; and avoid creating areosols. In addition they should use approved medical cleaning solutions because commercial products are not intended for use with instruments. Commercial products can cause damage and/or limit cleaning effectiveness. In addition, abrasive goods should NEVER be used.

MANUAL CLEANING DETAILED STEPS

- **Identify all components:** Carefully examine the instrument to identify all parts that can be separated
- **Dis-assemble:** Follow the manufacturer's instructions or carefully separate the instrument into its components
- **Clean each component:** Use a suitable detergent and cleaning solution to thoroughly clean each component:
  - To ensure all surfaces of instruments are accessible for cleaning, they should be disassembled into their individual components. This allows for thorough cleaning of every surface, including grooves, joints, and lumens

- **Inspect for cleanliness:** After cleaning, inspect each component for any remaining debris or residue
- **Rinse and dry:** Rinse all components thoroughly with clean water and dry them carefully
- **Re-assemble:** Re-assemble the instrument according to the manufacturer's instructions
- **Final inspection:** After re-assembly, inspect the instrument for any remaining debris or residue and ensure it is functioning properly

Adding to the cleaning challenge are instruments that are not treated with a pre-treatment. They require longer time to clean and this affects turnaround times.

SEMI-AUTOMATED WASH PROCESS

The Ultrasonic Cleaner is used for:

- Delicate instruments
- Instruments that have dirt baked on them
- Instruments to be cleaned with a stainless steel revitalising product

Use Cavitation Process:

- Superior to manual scrubbing/cleaning
- Requires non-foaming detergents

AUTOMATED WASHING PROCESS

Washer Disinfector

- Replaces hand washing for almost all goods
- Process Instrument volumes allow more time for cleaning challenge devices
- Washes, disinfects and dries the load in one cycle
- Dosage of detergent is preset so no waste
- Cycle can be validated

It is also important to monitor and verify the quality of the water, and verify the frequency and efficiency of the maintenance of your CSSD equipment. Failure to do this can have dire consequences for your equipment - and the lives of your patients.

ROUTINE MONITORING

Decontamination has evolved and advanced over the last 70 years and it is now time to focus on the first

and most important step of reprocessing. As Spaulding so famously said: If its not clean it can't be sterile!
- If they are used routinely, one needs to wash monitors and evaluate protein swabs
- Independently challenge the cleaning efficacy of the washing process
- This helps improve machine performance, staff performance and equipment and instrument safety
- This provides assurance and a traceable record

One amazing innovation is the Getinge Rotary Heat Sealer, which is a dedicated packaging station for your sterilised items. Key features of the equipment include:
- Short heating-up time
- User-friendly validatabity according to DIN EN ISO 11607-2
- CENTRIC colour touch-screen

Slow-start function:
- Pouch guide
- Blue light communication
- Built-in printer

STERILISATION MONITORING

Sterilisation best practices recommend processed loads be monitored using three types of indicators: physical; chemical and biological.

The Getinge range includes:
- Chemical Indicators
- Biological Indicators
- Sterile Packaging Systems
- Record Keeping Systems
- Sterilisation Training
- Sterilisation Consulting

But the rule of thumb must be: Only use Approved packing items for sterilisation This packaging is designed to provide a barrier against contamination, allowing for proper sterilisation processes like steam sterilisation. The packaging is crucial for maintaining sterility after sterilisation, ensuring instruments remain clean and safe for use - for example self seal pouches, steriseals, Tyvek, and wrapping sheets. And create sterile zones in the CSSD.

TYPES OF STERILISATION IN CSSD

There are three main types of Sterilisation in CSSD (Central Sterile Supply Department):

- Electric steam sterilisation
- Ethylene oxide sterilisation
- Hydrogen peroxide sterilisation

Remember: A steriliser does not clean the load so - if soiled items are placed in the steriliser, they will come out with the dirt baked onto it. Infection control starts with us - and through close collaboration with the Infection Control Manager, we ensure every instrument is safe, every time. Together, we protect patients and uphold the highest standards in healthcare.

Ina Buitenbos is a Register Nurse who specialised in OR Techniques as well as being a facilitator before becoming the Product Manager - Getinge Infection Control and a certified Getinge Trainer. After spending years in the hospital, healthcare industry and building knowledge and experience in OR, it was time to pursue my passion for training in the healthcare sector and she joined Medhold Medical as a product manager. Her certification as a Getinge Trainer has enabled her to reach larger groups of health professionals in preventing infections in the hospital environment, especially CSSD.

She is passionate about training, capturing the audience with simplicity, but also with scientifically and clinical sound evidence. She is also a keen researcher - particularly in the area of infection control and prevention. This ensures her ability to present workshops and papers on the latest facts and evidence to enhance provision of quality healthcare.

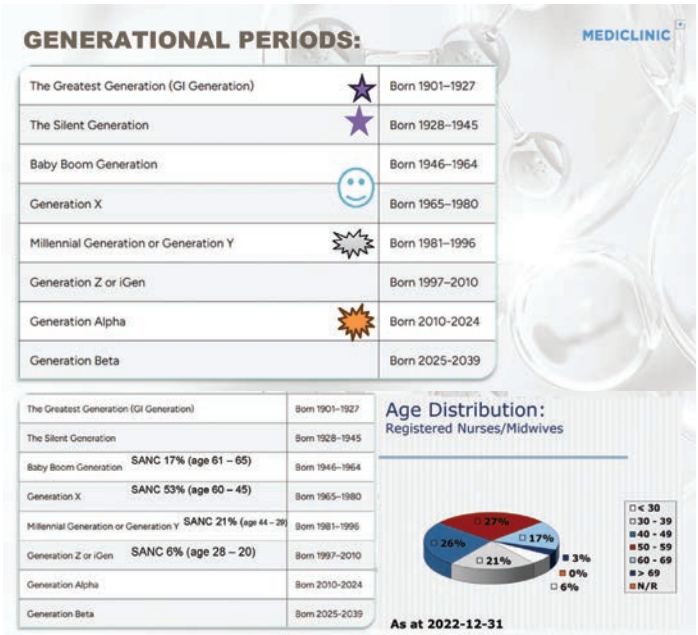
Working With A Multi-Generational Workforce

By Erna Roos, MCSA Clinical Quality Specialist

Previous generations will forever scratch their heads about 'kids these days'. But we were all (at some point 'one of those kids'. A generation is a group of people born in one time span. Critical events influence ones formative years as a teen or young adult. Gloria Steinem once fatuously said: We need to remember across generations that there is as much to learn as there is to teach.

So let's tale a look at what events and conditions influence a generation:

- Economic climate
- Social upheaval/civil rights movements/war
- Pop culture and fashion
- Parenting trends
- Technological advancement
- 'Where were you when ...' moments



GENERATIONAL DIFFERENCES IN THE WORKPLACE:

Baby boomers: 1946 to 1964

Characteristics: Optimistic, competitive, workaholics, team-oriented
Motivated by: Company loyalty, team work, public recognition and work advancement
Communication style: Whatever is most efficient, phone calls, face-to-face meeting
World view: Achievement comes after paying one's dues; sacrifices for success, live to work
General Influences: Boycott Apartheid; Remember Sharpeville; Women's Liberation', Beatlemania

General X: 1965 to 1980

Characteristics: Flexible, informal, sceptical, independent
Motivated by: Diversity, work/life balance, personal-professional interest vs company interests
Communication style: Whatever is most efficient, phone calls, face-to-face meeting
World view: Quick to move on if needs are not met, resistant to change at work if personal lives are affected
General Influences: The War on Drugs; The Third Industrial Revolution; Queen (the band) HIV/AIDS

Millennials/Generation Y: 1981 to 1996

Characteristics: Competitive, civic - open minded, achievement oriented
Motivated by: Responsibility, quality of the manager, unique work experience
Communication style: Instant messages, texts, emails
World view: Seeks challenges, growth and development, fun at work - life balance; leave the organisation if they do not like the change
General Influences: The Twin Towers, Free Nelson Mandela, Michael Jackson, Britney Spears (the singer)

Generation Z: 1997 to 2010

Characteristics: Global, entrepreneurial, progressive, less focused
Motivated by: Diversity, personalisation, individuality/creativity, new technologies

Communication style: Instant messaging, texts, social media
World view: Self identity as digital device addictives, value independence and individuality, prefer to work with Millennial managers, innovative co-workers

SO WHAT ARE THE BENEFITS OF A MULTI-GENERATIONAL NURSING WORKFORCE?

- Diverse perspectives
- Skills transfer from mentors to the next generation
- Increased innovation
- Improved patient outcomes

HOW DO WE NAVIGATE A MULTI-GENERATIONAL NURSING WORKFORCE

The most important lesson is to understand the generational differences between the groups. This will help to foster inclusivity and respect, promote open communication, leverage on generational strengths, adapt leadership styles and create an inclusive work environment. George Orwell famously said: Each generation imagines itself to be more intelligent than the one that went before it, and wiser than the one that comes after it.

Erna Roos is a clinical quality nursing specialist: theatre where she leads the operating theatre team for the Mediclinic Group divisions in Southern Africa and Namibian hospitals. Her primary focus is on providing quality peri-operative care and rolling out projects in the operating theatre environment. She is also the lead in collaborative efforts on Mediclinic's behalf between South Africa, the United Arab Emirates and Switzerland. Academically and from an experience point of view, she has been a scrub practitioner for 14 years across all surgical disciplines, with specialised interests in general, vascular and cardiac surgery. Erna has also been a unit manager for four years, and has worked as an educator for 15 years, facilitating and moderating various basic nursing programmes and specialised operating theatre programmes. She has also been a clinical quality nursing specialist: theatre for four years.

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The Indications For And Timing Of Haemodialysis In Critically Ill Patients With Acute Kidney Injury In Johannesburg, South Africa

By P M Brown, BSc (Hons), MB BCh, DA (SA), FCA (SA), MMed (Anaesthesiol); L Redford, MB BCh, DA (SA), FCA (SA), MMed (Anaesthesiol); and S Omar, MB ChB, FCPath (SA) Chem, DA (SA), Critical Care (SA)

INTRODUCTION

Acute kidney injury (AKI) represents a broad spectrum of pathological processes ranging from clinically undetectable changes to severe injury, which is associated with either reversible or permanent and complete loss of renal function[1]. There is evidence suggesting that even mild reversible AKI confers significant independent risk for morbidity and mortality[2-7], and contributes to increased healthcare costs[8]. There is a scarcity of data to quantify the incidence of AKI in intensive care units (ICUs) in South Africa; however, it is likely to be higher than that of the developed countries as a result of the burden of disease associated with AKI in this region[3].

It was postulated that initiating dialysis prior to the development of classic indications may be beneficial due to high morbidity and mortality associated with AKI. The risks associated with renal replacement therapy (RRT) need to be balanced against the possible benefits of early RRT, especially considering that some patients with AKI may have spontaneous recovery of renal function[9]. Early initiation of RRT prior to the onset of severe AKI could potentially prevent kidney-specific damage and remote organ injury resulting from fluid overload, systemic inflammation, electrolyte and metabolic imbalance, while promoting greater kidney recovery[10, 11].

Three large prospective randomised control trials (RCTs) have been conducted to assess the value of early RRT. The results from the artificial kidney initiation in kidney injury (AKIKI) trial[12] and the initiation of dialysis early v. delayed in the intensive care unit (IDEAL-ICU) trial[13] showed that there is no mortality benefit in early initiation of RRT (p=0.79 and p=0.38, respectively), whereas the effect of early v. delayed initiation of renal replacement therapy on mortality in critically-ill patients with acute kidney injury (ELAIN) trial[14] found that the mortality rate was reduced (39.3% v. 53.7%) in the group that initiated RRT early, compared with the late group (hazard ratio (HR) 0.66; 95% confidence interval (CI) 0.45 - 0.97). A recent meta-analysis which included seven RCTs concluded that there was no difference in mortality between early and late initiation of RRT (p=0.97)[15].

Current recommendations for initiation of RRT in the setting of AKI are not graded due to a lack of high-quality evidence[2]. This has resulted in a wide variation in interpretation and implementation of RRT among clinicians[16]. There is a paucity of local data in the literature, thus we undertook to describe local practices in managing RRT in AKI in a developing country.

METHODS

Design and setting

A retrospective chart review was performed at the Chris Hani Baragwanath Academic Hospital main ICU, which is a combined adult and paediatric multi-disciplinary ICU. Ethical approval was obtained from the Human Research Ethics Committee at the University of the Witwatersrand (ref. no. M170684). The study period extended from 1 January 2014 to 31 December 2015. There is no protocol in place for the initiation of RRT; therefore, clinicians use their discretion.

Patients and data

All adult patients with AKI who underwent RRT were eligible for inclusion, while those with known chronic kidney disease and prior nephrectomy were excluded. Data were collected on the day of admission as well as on the day of RRT if they differed. Data points pertaining to demographics, metabolic, renal, ventilation, oxygenation, haemodynamic, septic and haematological markers as well as patient outcome were entered into a Microsoft Excel spreadsheet. In addition, the simplified acute physiology score (SAPS) II and the sequential organ failure assessment (SOFA) scores were calculated. This was performed by the principal investigator (PMB).

Statistical analysis

All data were assessed for normality. All independent medians were compared with the Mann-Whitney U-test, while dependent medians were compared with the Wilcoxon matched paired test. Categorical data were assessed with the χ^2 test. Data analysis was carried out using Statistica, version 13.3 (TIBCO Software Inc., USA). A p-value <0.05 was considered to be significant. Calculation of sample size was based on an estimated incidence of RRT of 5% - 10%, 95% confidence and a precision of 5%. The minimum required sample size was 73 patients. We recruited participants over a two-year period (1 January 2014 until 31 December 2015) to ensure this minimum sample size was achieved.

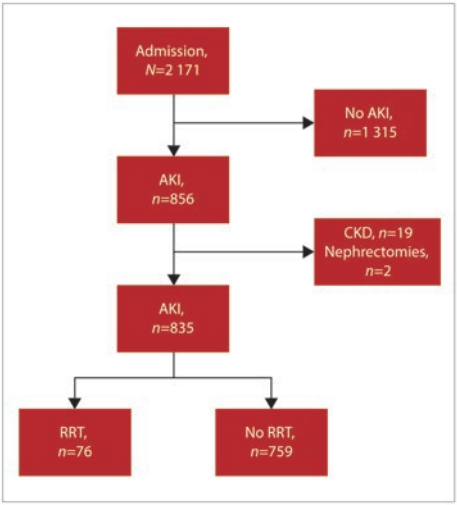

Fig. 1. Flow diagram showing patient realisation. (AKI = acute kidney injury; CKD = chronic kidney disease; RRT = renal replacement therapy).

RESULTS

There were 2 171 ICU admissions during the two-year study period. The majority of these admissions (n=1 315) did not meet the criteria for the diagnosis of AKI (Fig. 1). The overall incidence of AKI was 39.4% (n=856/2 171). Of the 856 patients who met the inclusion criteria, 76 patients were dialysed and represent the study population. The median (interquartile range (IQR)) age of the study participants was 35.5 (25 to 46) years. The majority of them were male (52.6%). The median SAPS II score (43) gave a predicted mortality rate of 30.6%. The baseline characteristics are shown in Table 1.

Table 1. Summary of study results

	All at D_0, median (IQR)*	D_0 RRT, median (IQR)*	$D_{1\text{-}21}$ RRT, median (IQR)*	*p*-value
Demographics				
Sex (male), *n* (%)	40 (52.6)	23 (54.8)	17 (50)	0.68
Age (years)	35.5 (21)	34.5 (18)	39.5 (24)	0.39
SOFA score	9 (4.5)	10	10	0.67
Predicted mortality SAPS score	43 (21)	45.5 (22)	41.5 (17)	0.04
Blood gas				
pH	7.28 (0.21)	7.273 (0.238)	7.278 (0.167)	0.56
BE (mmol/L)	−10.8 (9)	−12.1 (7.9)	−7.2 (7.2)	0.35
Lactate (mmol/L)	3.1 (4.4)	2.550 (4)	3.25 (4.4)	0.42
K^+ (mmol/L)	4.7 (1.4)	4.95 (2.1)	4.4 (1.1)	0.05
Na_2 (mmol/L)	137 (9.5)	135.5 (10)	138 (9)	0.01
$PaC0_2$ (mmHg)	32 (13.1)	31 (13.1)	34 (10.5)	0.1
P/F ratio	264 (183)	264.167 (193.095)	262.5 (184)	0.69
Biochemistry				
S_{Cr} (mmol/L)	349 (438)	505 (459)	331 (203)	0.00
Albumin (g/L)	24 (8.5)	24 (9)	25 (8.5)	0.47
Phosphate (mmol/L)	1.61 (1.29)	1.97 (1.66)	1.37 (0.950)	0.08
Bilirubin (mmol/L)	13.5 (20)	14.5 (20)	11.5 (21.5)	0.62
Ca^{2+} (mmol/L)	2.08 (0.34)	2.070 (0.320)	2.2 (0.350)	0.88
Cumulative fluid balance (mL)	2 311 (1 721)	0	2303 (1 730)	0.00
Cardiovascular				
MAP (mmHg)	71 (29)	69.33 (29.66)	80 (29.33)	0.11
Heart rate (/min)	123 (34)	123.5 (41)	121 (27)	0.64
Ventilation				
Peak ventilator pressure (mmHg)	20 (13)	20 (5)	20 (5)	0.74
Invasive ventilation, *n* (%)	53 (69.7)	27 (64.2)	26 (67.6)	0.7
Respiratory rate (breaths/min)	26 (13)	27 (14)	24 (10)	0.5
Haematology and infection				
White cell count ($\times 10^9$/L)	12.1 (9.7)	15.44 (10.8)	9.3 (6.070)	0.001
C-reactive protein (mg/L)	195 (159)	198 (138)	181 (215.5)	0.32
Procalcitonin (μg/L)	38 (76)	36.9 (81.63)	214.5 (165)	0.43
Sepsis present, *n* (%)	56 (73.7)	33 (78.6)	23 (67.6)	0.38
Hb (g/dL)	9.2 (3.4)	8.9 (3.1)	9.65 (4.2)	0.05
Platelet ($\times 10^9$/L)	168 (185)	128 (143)	214.5 (165)	0.04
INR	1.31 (0.34)	1.29 (0.37)	1.49 (0.6)	0.04
aPTT (sec)	40 (17.5)	40 (15.8)	48.25 (31.9	0.36
Outcomes				
In-ICU mortality, *n* (%)	2 (2.6)	1 (2.4)	1 (2.9)	0.88
Composite (death, RRT/diuretic dependence), *n* (%)	21 (27.6)	14 (33.3)	7 (20.6)	0.22

RRT = renal replacement therapy; IQR = interquartile range; SOFA = sequential organ failure assessment; SAPS = simplified acute physiology score; BE = base excess; P/F = pO_2 divided by fraction of inspired O_2; MAP = mean arterial pressure; INR = international normalised ratio; aPTT = activated partial thromboplastin time; ICU = intensive care unit.
*Unless otherwise specified.

The relative frequencies for the indications for RRT were oliguria/anuria (50%; n=38), worsening urea/creatinine (29%; n=22), acidosis (11.8%; n=9), refractory hyperkalaemia (5.3%; n=4), fluid overload (2.6%; n=2), and no absolute indication (1.3%; n=1). The majority of patients (55%; n=42) had RRT instituted on admission day (D_0RRT), while 45% (n=34) were initiated between day 1 and 21 ($D_{1\text{-}21}$ RRT). Table 2 summarises the relative frequencies of the KDIGO stage for AKI between the two groups on admission day and the day of initiation of RRT. Patients admitted in KDIGO stage 1 and 2 were significantly less likely to undergo RRT on admission day (odds ratio (OR) 0.21; CI 0.06 - 0.73). Overall, the KDIGO stage increased significantly from D_0 to RRT day for the $D_{1\text{-}21}$ RRT group (p=0.0004). Comparisons between the two RRT groups (D_0RRT v. $D_{1\text{-}21}$ RRT) are shown in Table 1.

The cumulative number of the surgical sub-specialities (general surgery (n=15), obstetrics and gynaecology (n=13), trauma (n=17) and orthopaedics (n=3)) makes post-surgical patients (63%; n= 48) the largest group requiring RRT, followed by medical patients (37%; n=28). Almost all patients (n=35/36) who underwent surgery prior to ICU admission had emergency surgery. The majority of the study participants (61.8%; n=47) had no known comorbidities. A tenth of the participants had HIV (13.2%; n=10), followed by hypertension (10.5%; n=8), and diabetes (6.6%; n=5). Multiple comorbidities affected 7.9% of the study participants (n=6). There was no difference in median (IQR) SOFA score 10 (8 to 12) on the day of RRT between the two groups (p=0.67). However, in the group undergoing RRT after D_0, the SOFA score increased from a median (IQR) of 7 (4.5 to 9.5) on admission to 10 (8 to 12) on the RRT day (p=0.0004).

Table 2. AKI staging of the two patient groups

	Staging on admission		Staging on RRT day	
KDIGO Stage	D_0 RRT *n* (%)	$D_{1\text{-}21}$ RRT *n* (%)	D_0 RRT *n* (%)*	$D_{1\text{-}21}$ RRT *n* (%)
No AKI	0	7 (20.6)	-	0
Stage 1	0	5 (14.7)	-	0
Stage 2	4 (10)	4 (11.8)	-	2 (6)
Stage 3	38 (90)	18 (53)	-	32 (94)

AKI = acute kidney injury; KDIGO = kidney disease improving global outcomes; RRT = renal replacement therapy on the day of admission.
*Results are the same as those on admission (day of RRT was the same).

Once a decision to initiate RRT was made, the median (IQR) time to starting RRT was 4 (2 to 6) hours. There was no significant difference between the D_0 RRT group and the D1-21 RRT group (p=0.34). The composite of death, RRT dependence and diuretic dependence at ICU discharge was 21% (n=16/76). There was no significant difference in the composite outcome between the two groups (p=0.22). The overall in ICU mortality was 3% (n=2/76).

DISCUSSION

The incidence of AKI was 39.4% in this present study. Internationally, the incidence of AKI in ICU patients ranges from 20% - 50%[1]. Our study included admissions to a single unit consisting of both ICU and high-dependency beds. The inclusion of the high care group with a lower severity of illness may have resulted in a lower than expected AKI incidence. This may be compounded by a higher admission and turnover rate in the high dependency unit compared with the ICU. The same factors may also explain the RRT incidence of 4.5%, which appears lower than the incidence of RRT internationally (5% - 10%)[17]. Our study population was unique when compared with others in the literature. The median age of the study

population was 35.5 years. The majority of the patients were surgical (63%) with more than a third of these being trauma patients. Additionally, all but one of the patients who underwent surgery prior to ICU admission were emergency surgical cases. There was a high burden of HIV (13.2%) in the study population. This is in line with the reported HIV prevalence of 13.5% in SA[18]. There was also a high frequency of sepsis (83%) in the population sampled. This is in contrast to the study populations in the AKIKI, IDEAL-ICU and ELAIN trials, where the median age of all groups was >60 years, the incidence of reported emergency surgery was ~12% and HIV was not a significant comorbidity[12 - 14].

Overall, 90% or more of our study participants underwent RRT after reaching KDIGO stage 3. Although earlier studies, mostly non-randomised, suggested that early initiation of RRT prior to the development of the classic indications for RRT may confer improved outcomes[2 - 5 - 7, 19, 20], the most recent evidence of over 2 000 patients from randomised trials shows no benefit of this early RRT strategy[15]. A significant proportion of AKI patients in both the AKIKI and IDEAL-ICU studies spontaneously recovered when RRT was withheld, provided that no classic/emergent indications for RRT arose[12, 14]. The practice observed in our study was in keeping with these more recent findings with initiation of RRT in stage 3 AKI (late) using predominantly classic/emergent indications.

The observed median serum creatinine difference between the D_0RRT and $D_{1\text{-}21}$ RRT groups can be explained by delayed admission to the ICU. This is not unexpected in a resource-limited setting. However, once patients were in ICU, access to RRT was better. The AKIKI trial population had a higher severity of illness score at admission in comparison with ours; however, the SOFA score at initiation of RRT was similar, indicating a common threshold to initiate RRT. The discrepancy between severity of illness and organ dysfunction may be explained by the fact that our group had similar organ dysfunction necessitating support, but a greater underlying reversibility when compared with the AKIKI trial.

Despite a relatively high composite outcome, the early mortality was only 3% at ICU discharge. Several factors may explain this finding. The first is that in a resource-limited setting, patients admitted to the ICU are strictly triaged to make sure that resources are distributed equitably. This may result in a selection bias where patients with likely better outcomes are admitted. Secondly, it is likely that a similar selection bias for RRT within the ICU exists for the same resource constraints. Finally, outcomes at ICU discharge are generally lower than at hospital discharge and at 90 days. Unfortunately, we did not look at all the patients with AKI to assess if any patients who required RRT did not receive it. Decisions not to escalate therapy including RRT were also not examined and it is possible that patients with a better prognosis may have been selected.

Classic indications were the predominant trigger for RRT initiation in this present study. This is in keeping with the delayed groups of the IDEAL-ICU and AKIKI trials[12, 14]. The IDEAL-ICU delayed group had RRT initiated for comparable indications as our study population. These were metabolic acidosis (8% v. 11%), hyperkalaemia (4% v. 5.3%), fluid overload (2.6% v. 2.6%) and other (2% v. 1.3%). Patients in this present study received RRT predominantly when they had reached stage 3 AKI (90% and 94% for the D_0RRT and $D_{1\text{-}21}$RRT groups, respectively). Of the group who received dialysis thereafter ($D_{1\text{-}21}$RRT group), 47% were classified with stage 1 or stage 2 AKI on admission. This group is of great interest. The ability to predict deterioration before it happens may provide a therapeutic or preventive window.

STUDY LIMITATIONS

This was a retrospective study with a small sample size that employed convenience sampling over a period of two years at a single centre. The aforementioned can all lead to a non-representative sample of the general population. The study extracted information from patient charts, clinical notes as well as a database that is populated for each patient. This was done solely by the PMB with knowledge of the data capturing system in place. This decreased the occurrence of incorrect information and missing data points. The patients with AKI who were not dialysed were not assessed further. This group of patients may represent a subset of patients that needed dialysis but were not afforded it because of limited resources, they are haemodynamically unstable or have poor prognosis. The study period (2014 to 2015) may represent a dated study period; however, the absolute and relative indications for RRT remain unchanged.

CONCLUSION

The study population was young, predominantly male and had post-emergency surgery with a high burden of sepsis and HIV. The observed current threshold for RRT was late (stage 3 AKI with classic/ emergent indications) with outcomes comparable with reviewed literature. Further research looking at patients that were not dialysed but potentially required it would offer greater insights. Expanding the study population to include other centres and performing a prospective study should also be considered.

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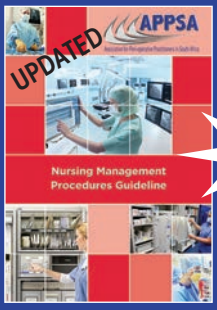

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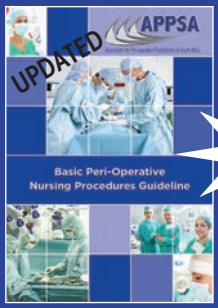

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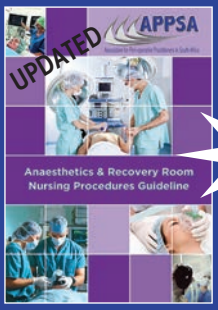

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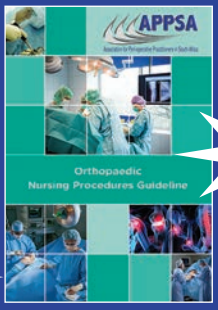

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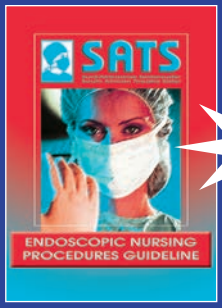

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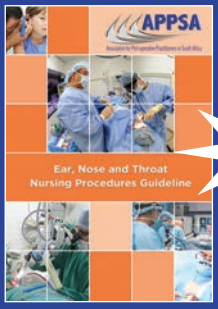

R150

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EN13795 - Do your surgical drapes and gowns comply to the right quality standards?

Drapes and gowns provide an essential barrier to help preserve the sterile field during surgery. They protect healthcare workers' exposure to body fluids and potential infectious material, while preventing bacterial contamination of the surgical site.

With Hospital-Acquired Infections (HAI) affecting many patients at high cost to the healthcare system, it is vital to ensure that surgical drapes and gowns offer the best possible barrier protection.
How do we ensure this?

EN 13795 is the European standards relating to general requirements, testing methods and specific performance levels for single-use and multiple-use surgical drapes, gowns and clean air suits. The standard is designed to ensure that a basic level of performance has been achieved in order for a surgical gown or drape to be classed as fit to use for a surgery.

EN 13795 consists of three parts:
Part 1: General requirements for manufacturers, processors and products
- The scope includes testing requirements as follows:

CHARACTERISTICS TO BE TESTED	GOWNS	DRAPES
Resistance to microbial penetration - Dry	✓	✓
Resistance to microbial penetration - Wet	✓	✓
Cleanliness - Microbial	✓	✓
Cleanliness - Particulate matter	✓	✓
Linting	✓	✓
Resistance to liquid penetration	✓	✓
Adhesion for fixation for the purpose of wound isolation		✓
Busting strength - Dry and wet	✓	✓
Tensile strength - Dry and wet	✓	✓

Part 2: Test methods
- This section stipulates the test methods that manufacturers or processors will have to complete in order to ensure that the device will comply with the requirements in parts 1 and 3 of the standard.

Part 3: Performance requirements and performance levels
- The levels of performance are selected as **'standard'** or **'high performance'** and are differentiated by critical and less critical areas on drapes or gowns.
- Standard Performance addresses the minimum performance requirements of medical devices, while High Performance addresses elevated performance requirements. These differ according to levels of mechanical stress, fluid levels and durations of surgical procedures.

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