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Association for Peri-operative Practitioners in South Africa

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- 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

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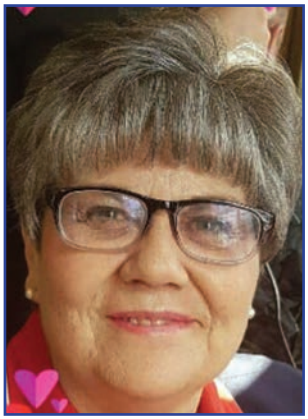
Contents

REGULAR FEATURES



From The President

The National Health Insurance Bill has been passed in Parliament, with some people being very in favour of it and others being against it. I will reserve my own beliefs on the actual legislation but I can say with 100% certainty that Universal Health Coverage, or access to quality healthcare for all citizens in South Africa, is something everyone has a right to. It is written in our Constitution. We all deserve access to quality healthcare when we are at our most vulnerable - and that is when we are ill.

Where I will enter the debate, however, is to offer these opinions: we do not have quality healthcare infrastructure in public healthcare facilities; we are hopelessly understaffed and healthcare practitioners across all spheres are being asked to shoulder the burden of caring for patients when we - ourselves - and overburdened and tired; and wherever you turn, you hear of budget cuts not budget increases.

On a daily basis, as healthcare providers, we are being asked to do more ... on a smaller and smaller budget. The cost implications of implementing the NHI in South Africa today is unaffordable. Where will the money come from? Even the Finance Minister has admitted that South Africa cannot afford to implement this wonderful system as things stand at the moment. So what is the answer? There are not enough clinics and hospitals as it stands, and we need to fix that which is broken in those that are currently available. In addition, critical staff - whether we are talking about specialists, doctors, medical officers, nurses or peri-operative practitioners - are not available to provide the care needed by patients.

We need to get the basics right before we start to work on adding additional responsibilities on us, as an already over-burdened workforce. We need to ensure that in order to double the workload on the public health sector, the infrastructure needs to be fixed and the workforce needs to be significantly increased.

These are ideals we need to strive towards. These are ideals we need to work towards. They cannot be arbitrarily thrust on us and we must just carry the burden. It will only serve to break the already broken system irreparably. Goals and dreams are wonderful ideals. But they have to be practical before they can really be implemented.

On another note, I am sure you will join me in wishing our Journal Editor, Madeleine Hicklin, hearty congratulations on her appointment as the Democratic Alliance Spokesperson on Health in the Gauteng Provincial Legislature. We once again have a direct link into the Halls of Government to get our issues addressed.

Best Wishes
Marilyn de Meyer
APPSA President

From The Editor

On 14 August, the World Health Organization (WHO) declared the mpox outbreak in Congo and elsewhere in Africa a global emergency as health authorities sound the alarm about the rapid spread of the disease, and a dangerous strain moving across borders. WHO director-general, Tedros Adhanom Ghebreysus said that this is something that should concern all of us as the potential for further spread within Africa and beyond.

When I read this, and discussed this with some colleagues in my new position as the Democratic Alliance Spokesperson on Health in the Gauteng Provincial Legislature, memories of the COVID-19 pandemic coloured our conversation – and the panic that these kinds of disease outbreaks create in our society. It reminds us of the lockdown that was imposed on the country by the Government. The havoc this lockdown caused to so many people, the thousands of people who succumbed to this dreadful disease in South Africa and across the globe, or whose businesses collapsed as a result of this lockdown still reverberates through our society. Many people lost their lives, their jobs, their homes and their livelihoods. It was horrific. And our healthcare personnel were at the coalface of treating the nation. You, as peri-operative practitioners, faced death every single day and did not know how the day would end for you and your families.

Colleagues, let me assure you of one thing: Mpox and COVID-19 are not the same thing. Mpox is very serious. I appreciate that, but the mode of transmission is very different and despite it being a serious emerging health crisis, there is no reason for anyone to panic the way they did during COVID-19. They are not on the same level and as it stands today, we do not stand on the brink of another lockdown. As in respect of all health crises, the onus is on all healthcare professionals to practice universal hand hygiene by regular hand-washing practices, safe surgical practices and using appropriate Personal Protective Equipment (PPE) when dealing with all patients in your daily lives. This should be done a daily basis – irrespective of whether there is a health crisis of this nature or not. Safe surgery saves lives! Checklists save lives! Universal hand hygiene saves lives! Colleagues, as health practitioners, everyone needs to go back to basics. It's really that serious – but also that simple. As APPSA members, take the initiative: lead by example and show the younger members of your team who are following in your very able footsteps that the practices that have stood our predecessors in good stead over the years, are ones which you all need to pursue going forward.

On a different note, APPSA is your voice piece. Make suggestions to your Chapter Presidents about Study Day topics you would like covered. Propose ideas that will enable you to be upskilled and secure your personal development. You must guide the leaders of this association as well as allowing them to guide you through their lived experience and knowledge. APPSA is a collaboration with all role players taking an active part in making the organisation a vibrant and representative group.

So, in closing I encourage you all to Be Safe, and Be Pro-active in your daily lives.

Madeleine Hicklin

Operating Room Nurses' Understanding Of Their Roles And Responsibilities For Patient Care And Safety Measures In Intra-Operative Practice

By Bisma Chellam Singh[1], RN, BSN, MSN and Judie Arulappan[2], MSc (N), PhD, DNSc

ABSTRACT

Introduction: Surgical care has been a vital part of healthcare services worldwide. Several patient safety measures have been adopted universally in the operating room (OR) before, during, and following surgical procedures. Despite this, errors or near misses still occur. Nurses in the OR have a pivotal role in the identification of factors that may impact patient safety and quality of care. Therefore, exploring the OR nurses' understanding of their roles and responsibilities for patient care and safety in the intra-operative practice, which could lead to optimal patient safety, is essential.

Objective: This study explored the understanding of OR nurses regarding their roles and responsibilities for patient care and safety measures in the intra-operative practice.

Methods: The study was conducted in one of the tertiary care hospitals in the United Arab Emirates. Qualitative, descriptive, exploratory research design was utilised. The data were collected using semi-structured face-to-face interviews. Purposive sampling included eight nurses. Data analysis was performed following Colaizzi's seven-step strategy.

Results: Seven emerging themes were identified. The main themes are: patient safety, pre-operative preparation, standardisation of practice, time management, staffing appropriateness, staff education and communication, and support to the patient in the OR.

Conclusion: OR nurse leaders may take into consideration the current findings as a reference for quality improvement projects in the hospital, considering the specific characteristics of each local setting. Although the participants consider that the environment is safe and the quality of care is high in the study setting, there is still room for improvement on workflows and processes. OR workflow should be improved especially by addressing the potential patient safety issues.

INTRODUCTION

Intra-operative practice is highly complex and challenging considering the vulnerability of the patient *(Peate, 2015)*. The intra-operative period starts when the patient arrives at the operating room (OR) and ends when the patient gets transferred to the post-operative ward *(Salazar Maya, 2022)*. The care in the OR involves high use of technology and is different than the care provided in other settings of the hospital. OR nurses play an instrumental role in preventing infection, maintaining asepsis, handling instruments, adopting medical techniques, preventing complications, and handling biological preparations. Additionally, nurses play an essential role in planning care and collaborating with the patient, surgical team, and other healthcare providers (*Flaubert et al., 2021; Kelvered et al., 2012).*

Patient safety during surgery is one of the major alarms for intra-operative teams as adverse events occurring during this period are the major cause of disability and death *(Rodziewicz et al., 2022)*. Patient safety involves decreasing the danger of superfluous harm including anticipation of errors and avoidable adverse events to shield patients from injury *(Ingvarsdottir & Halldorsdottir, 2018)*. Major complications emerge in 3% to 22% of surgeries, and the mortality rate is reported as 0.4% and 0.8%. As the issue of patient safety takes a major toll, the World Health Organization *(WHO, 2017)* calls for addressing the issue in the report *Safe Surgery Saves Lives*. These complications might be avoided if patients are taken care of during this period *(Ingvarsdottir & Halldorsdottir, 2018)*.

REVIEW OF LITERATURE

Ugur et al. (2016) claim that errors occur more in OR as the staff come from various disciplines with various educational schemes and work as groups, which may cause surgical confusions. Therefore, the preventable mistakes can be lessened when OR staff are qualified in patient safety, clear systems are pursued step-by-step, and control structures are created and utilised. Likewise, effective communication among the OR staff reduces the surgical errors *(Ingvarsdottir & Halldorsdottir, 2018)* and effective communication between the patient and medical and nursing staff enhances patient satisfaction *(Allison & George, 2014)*.

Ensuring patient safety in the OR includes prevention of all avoidable medical and surgical errors including preventing wrong person, site, procedure, and retained foreign objects. These errors can be prevented by structured communication with the patient, surgeon, and other healthcare team members *(American College of Obstetricians and Gynecologists, 2010; Rodziewicz et al., 2018)*. Additionally, correct identification of patients who are at risk of high blood loss, anaesthesia or airway issues, history of allergies, and prevention of surgical site infection is essential *(Mcdowell & Mccomb, 2014; Woodman & Walker, 2016)*. In addition, the errors could be prevented during the preparation of surgical environment, instrumentation, sutures, and drugs *(Taaffe et al., 2018; Williams & Hopper, 2015)*. Likewise, patient safety can be enhanced through proper scheduling of procedures, communicating with other colleagues, helping to ensure consistency with the surgical safety checklist, and screening the progress in the surgeries and reporting to the board *(Rothrock, 2018)*.

Despite all safety checks, there is a risk for errors, which could cause adverse events to surgical patients *(Rodziewicz et al., 2018)*. Hence, it is imperative that the nurses are knowledgeable about patient safety and do corrective actions as patient advocates. Considering the surgical risk for the patients, *McGarry et al. (2018)* and *Brown-Brumfield and Deleon (2010)* emphasise the role of nurses in intra-operative patient safety and *Kelvered et al. (2012)* and *Blomberg et al. (2018)* point out the vulnerability of patients undergoing surgery and the risks associated with the intra-operative environment. Moreover, *Gutierres et al. (2018)* recommend various measures to improve patient safety during the intra-operative period. Furthermore, the *International Council for Nurses (2013)* asserts that each registered nurse has a moral and ethical duty to speak up for the patient's best interest, show quietude, regard, secure patient autonomy, and self esteem *(Blomberg et al., 2018)*. Besides, accountability of nurses is essential for professional nursing practice and patient safety *(Battié & Steelman, 2014)*.

At the author's department, there were few incidences, such as specimen rejection, hand hygiene issues, errors in needles, sponge counting, and skin tearing in 2017 and 2018. Similarly, there was one incident of

skin injury during this period. This urged the authors to conduct the study to explore the understanding of OR nurses' roles and responsibilities for patient care and safety in the intra-operative practice, which could lead to optimal patient safety using evidence-based practice.

METHODS

Research Aim

The study explored the understanding of OR nurses regarding their roles and responsibilities for patient care and safety measures in the intra-operative practice.

Design

We adopted a qualitative, descriptive, exploratory research design. Nurse researchers who conduct qualitative studies are contributing important information to the nursing body of knowledge that cannot be obtained by any other research design *(Burns & Grove, 2005, p. 52)*. The qualitative researchers have a preference for understanding events, actions, and processes within a specific context *(Babbie & Mouton, 2001, p. 272)*. In addition, explorative research examines a phenomenon of interest, rather than simply observing and recording incidents of the phenomenon *(Lobelo, 2004, p. 20)*. Likewise, qualitative descriptive approaches to nursing and healthcare research provide a broad insight into particular phenomena *(Doyle et al., 2020)*. Similar research design has been utilised in a previous research *(Sehularo et al., 2012)*. This design is utilised in the current study to explore and describe the understanding of OR nurses regarding their roles and responsibilities for patient care and safety measures in the intra-operative practice.

Setting

The study was conducted in one of the tertiary hospitals in the city of Abu Dhabi in the United Arab Emirates. All interviews were taken place in a private room within the General Surgery OR department, which was quiet, private and calm that helped the participants to feel relaxed and ready to open and share their views.

Population

Population comprised general surgery OR nurses.

Sample and Sampling Method

The sample comprised eight general surgery OR nurses working at a tertiary hospital. Purposive sampling was adopted.

Criteria for Sample Selection

Inclusion Criteria. The study included nurses with more than two years of experience in OR as they had extensive experience and in-depth knowledge to share their roles and responsibilities for patient care and safety measures in intra-operative practice.

Exclusion Criteria. Nurses in management positions were excluded in this study as they are not performing direct patient care in the OR.

Ethical Considerations. The study was approved by the Royal College of Surgeons in Ireland (RCSI) - Medical University of Bahrain (MUB) - Research Ethical Committee (REC). Further approval was granted from the organisation involved in accessing and recruiting participants. All audio recordings were coded, password-

protected, and stored in a double-locked cabinet in the primary investigator's office. Names, address, phone number, email, and staff ID were not collected. Moreover, any information that may lead to the identification of the interviewees was deleted from the interview scripts. Likewise, the findings from the study were presented in ways that ensured that individuals cannot be identified.

Data Collection Method. The data were collected through a direct face-to-face individual interview with the participants using semi-structured probing questions. The data were collected in June 2019. The questionnaire comprised six central questions (See Table 1). All interviews were done using English as the communication language, and audio-recorded after obtaining consent and agreement from the study participants. Eight interviews were conducted individually. Each interview lasted between 27 minutes and 55 minutes. The interviewer asked follow-up inquiries to clear up individual reactions and to support elaboration as deemed appropriate.

POSITIONS AND ROLES IN THE STUDY

The research team had four members: the lead investigator, one researcher, one research team member with managerial responsibilities of supervision of nurses, and one research supervisor directly tied to the study organisation. The research team members used online meetings to track the study's progress and conclusions. All members have experience in nursing research. No repeated interviews were conducted in this study, and it is noted that no relationship between researchers and participants might influence the responses.

Pilot of Interview

Two pilot interviews were conducted before commencing the actual interviews. The pilot interview helped the researcher to become familiar with the aptitudes in interviewing and the progression of conversation.

Statistical Analysis

The collected data were transcribed and analysed using Colaizzi's (1978) seven-step framework. The steps are:

(i) Transcribing all the subjects' descriptions
(ii) Extracting significant statements
(iii) Creating formulated meanings
(iv) Aggregating formulated meanings into theme clusters
(v) Developing an exhaustive description
(vi) Identifying the fundamental structure of the phenomenon
(vii) Returning to participants for validation *(Edward & Welch, 2011)*. The principal investigator performed the analysis. The supervisor and the corresponding author verified the coding and themes and cross-checked for the consistency of the information

TABLE 1. INTERVIEW QUESTIONS.

Interview questions guide

1. As a theatre nurse what are your major responsibilities, such as, your daily tasks?
2. What are the challenges you face in your work area that could compromise patient safety?

3. Do you think any process or work flow which you practice needs to be altered to attain optimal patient safety? Which of those are directly nursing-related and which are not?
4. Have you identified solutions to improve patient safety? Which are those?
5. Have you presented those solutions to your management? And, if so, did you get support from them?
6. Would you like to add more to the point we discussed?

Credibility, Dependability, Transferability, Rigor, and Trustworthiness

To ensure credibility of the data, the researcher strongly engaged with the interviews by means of observation, documentation, and taking notes. Dependability was achieved through reviews and comments on coding accuracy given by the supervisor who has full knowledge of the study design and methodology. To establish transferability, data collected from participants and the findings could be applicable to other contexts, situations, times, and populations and the study setting. The researcher adhered to rigour by carefully collecting data via audio recordings and by taking field notes.

Each interview was transcribed immediately after the interview by the principal investigator. The transcripts were given to the participants for cross-checking and approval *(Forero et al., 2018; Lincoln & Guba, 1986)*. As described by *Stahl and King (2020),* trustworthiness was established by using an unbiased approach in selecting the participants and by participant's being honest, clearly recorded and accurately presented inputs. The samples were selected purely of the basis of inclusion and exclusion criteria. No selection bias was applicable in the study.

RESULTS

Sample Characteristics

The demographic variables of the study participants are presented in Table 2. There were eight study participants. Six of them were females and two were males. Age ranged from 28 to 52 years. Nurses' OR experience varied between eight and 23 years. All the participants had previous OR experience. The participants either had a Higher Diploma in Nursing or a BSN degree.

Table 2. Participants' Demographic Characteristics ($N = 8$).

Participant no.	Age	Gender	Years of experience in OR	Previous clinical experience	Highest educational level
P1	45	Female	22	OR	BSN
P2	28	Female	8	OR	BSN
P3	49	Female	22	OR	Higher Diploma in Nursing
P4	33	Male	10	OR	BSN
P5	31	Female	9	OR	BSN, CNOR (Certified Nurse Operating Room)
P6	46	Male	22	OR	BSN
P7	41	Female	12	OR	BSN, CNOR, RNFA (Registered Nurse First Assistant)
P8	52	Female	23	OR	BSN, CNOR, RNFA

Research Question Results

There were a total of seven emergent themes developed from 20 theme clusters. The themes include patient safety, pre-operative preparation, standardisation of practice, time management, staffing appropriateness, staff education and communication, and support to the patient in the OR (See Table 3).

Table 3. The List of the Final Theme Clusters and Emergent Themes.

Themes cluster	Emergent themes
• Safety checks, pressure over staff, and nursing responsibility for patient safety	Patient safety
• Total time patient spent under anesthesia	
• Adherence to universal protocol	
• Appropriate OR environment	
• Staff familiarization with holistic care of the patient	
• Patient advocacy	
• Hand hygiene	
• Materials and equipment readiness	Preoperative preparation
• Preoperative preparation prior to intraoperative phase	
• Uniformity of practice within the hospital	Standardization of practice
• Appropriate workflow for specimen handling	
• Turnaround time	Time management
• Teamwork	
• Instrument reprocessing	
• Adequacy of staffing	Staffing appropriateness
• Health status of staff	
• Surgeon availability	
• Staff training	Staff education
• Need to establish a better rapport and empathy with the patient	Communication with and support to the patients in the OR
• Proper communication with the patient	

Theme 1: Patient Safety. After comparing the statements from all the participants, patient safety was identified as the major role of all the OR nurses. Institute of Medicine defines patient safety as "the prevention of harm to patients". Emphasis is placed on the system of care delivery that (1) prevents errors, (2) learns from the errors that do occur, and (3) is built on a culture of safety that involves healthcare professionals, organisations, and patients *(Aspden et al., 2004; Clancy et al., 2005)*.

Theme Cluster: Safety Checks, Pressure Over Staff, and Nursing Responsibility for Patient Safety. The participants mentioned that the nurses should check if the patient is adequately padded to prevent contact with metal surfaces and improper positioning that causes nerve damage. Also, patients should be identified correctly.

... The main thing is the skin of the patient, the skin integrity. When she wakes up, I don't want her to get blisters because of her positioning, so nurses should make sure to check from top to toe that they are properly padded, their skin is not attached to any metal especially if they are going to use diathermy, it will cause burn if any metal is attached

... Rushing can lead [to] specimen being labelled incorrectly. (Participant 1)

... If you are in a rush or if you are distracted, you miss out on vital information. That could have safety implication. (Participant 3)

The participants suggested that patient safety should be the main goal for nurses and nurses are responsible for promoting safety and preventing injuries.

... It's very important for the patient to have someone that is paying attention to them, then you can do your other works afterward, once they have gone to sleep. You must spend that time with the patient, it's only a short period before they go off to sleep, then you can proceed with the rest of your duties. (Participant 3)

Another three participants also pointed out the nursing responsibilities for patient safety especially in protecting their confidentiality and prevention of falls.

Theme Cluster: Total Time Patient Spent Under Anaesthesia and Appropriate Instrument Handling. The participants pointed out that if the patient spends more time under anaesthesia, it can affect the safety of the patient. Staff members have to prepare everything in advance so as to avoid waiting for equipment and instruments once the patient is under anaesthesia.

> *... The more prolonged the patient is under anaesthesia more complicated it is. So, it is also reflecting the patient safety during the intra-operative period. (Participant 5)*

Theme Cluster: Adherence to Universal Protocol. Majority of the participants talked about the importance of universal protocol in patient safety.

> *... The WHO created the Sign-in, the Timeout, and the Sign-out, these are separate little checklists, but all-for-one procedure, including various aspects of care. So you pause when you do a little checklist, then you pause again before skin incision to ensure it is the right patient for the right surgery, check any allergies again and make sure the antibiotics have been given and then at the very end we do the Sign-out. This is what we do, was there any specimens, any blood loss, any issue to report, so it is checked, check all along the way. (Participant 3)*

Theme Cluster: Appropriate OR Environment. The participants highlighted the importance of appropriate OR environment in patient safety. They mentioned that the OR should be illuminated adequately and the noise should be kept minimum in order to attend to the needs of the patient.

> *... In our laparoscopic case, it is dark inside in the OR. So, it is hard to move around to help.*

> *If the music is playing, the surgeons are also teaching some of the interns, the residents, and another surgeon, so if they are talking all at the same time with the music, you wouldn't hear what they want at first. So, they have to repeat it again until they get mad and they will shout again so it can lead to one after the other because it is very noisy in the room. (Participant 7)*

Theme Cluster: Staff Familiarisation With Holistic Care of Patient. Two of the participants discussed the staff familiarity with the holistic care of the patient. They described that the surgeons should not operate on patients whose health status is not familiar to them, even though it is a simple surgery.

> *... All the staff in the room, is to be aware of the patient's status (intra-operatively) at all times, for example, haemodynamic, looking at the anaesthesia monitors, ECG, pulse oximeter, etc, so the second set of eyes is always a safe practice. (Participant 8)*

According to the participants, the same surgeon who is operating on the patient must be the one to provide care pre-operatively, intra-operatively, and post-operatively to render continuity of care.

Theme Cluster: Patient Advocacy. The participants claimed that nurses are the patient's advocates and they must speak up for the patients.

> *... When the patient is inside the OR, we are their only advocate and we should look after them very*

well. Because they trusted their life to us, so have to do our best. The patients are trusting us, and we have to do the best for the patient. Nurses must advocate for the patients as they cannot speak for themselves while under anaesthesia and also, they are very anxious in the OR. (Participant 1)

Theme Cluster: Hand Hygiene. Most of the participants acknowledged that hand hygiene is the fundamental concept in the prevention of infection and in promoting patient safety.

... So if you don't have proper hygiene, the patient is getting infection or the disease that he didn't have when he came to the hospital. That means, he is getting his condition worsening if you don't have proper hand hygiene. (Participant 5)

... It is like disciplining yourself to do hand hygiene because we have everything around us. We have the water, we have the sink all over, we have the solution, to do the hand hygiene. So, I think it is more on the discipline of the person on how to do it. (Participant 7)

Theme 2: Pre-operative Preparation. The participants argued that the pre-operative readiness of instruments, equipment, and supplies prior to wheeling the patient into OR can enhance patient safety in many ways. Pre-operative preparation includes the psychologic and physiologic preparation of a patient before an operation. The pre-operative period may be extremely short, as with an emergency operation, or it may encompass several weeks during which diagnostic tests, specific medications and treatments, and measures to improve the patient's general well-being are employed in preparation for surgery *(Turner, 2006).*

Theme Cluster: Materials and Equipment Readiness. Almost all the participants declared the importance of materials and equipment readiness prior to wheeling the patient into OR.

... Everything should be set up, the equipment in the room available, because we don't want to delay things when the patient is already on sleep, the surgeon needs this kind of equipment, as daily task, check that all the equipment is available. I don't want to put the patient asleep without having the proper equipment. (Participant 1)

... The equipment-wise, make sure that it is working well, it is not malfunctioning, and then instrument wise, make sure that our instruments are not defective, working well. (Participant 7)

Theme Cluster: Pre-operative Preparation Prior to Intra-operative Phase. One participant mentioned about the thorough preparation of the patient in the pre-operative department prior to wheeling inside OR. The assessment should be done thoroughly to prevent complications during the intra-operative period.

... I don't know how the pre-op nurses do the assessment. I think the assessment should be more thorough like sometimes they miss the patient still goes to the OR with hair clips, or still with jewellery on. (Participant 7)

Theme 3: Standardisation of Practice. Majority of the participants highlighted that the practices should be

based on the policy and protocol of the hospital. In addition, it is crucial for the safety of patients and staff. Standardisation of practice refers to the creation of standard clinical processes using process management in conjunction with robust, targeted measurement, and team-based care, in which measurement informs practice and practice informs evidence and further improvement *(McGinnis et al., 2013).*

Theme Cluster: Uniformity of Practice Within the Hospital. The participants said that everyone should practice patient care with proper understanding of the policies and procedure. The staff from different backgrounds should be trained to provide uniform care. Non-uniformity can lead to delayed treatments.

> *... We want to be safe; we want the patient to be safe, we want to provide the best care possible that we can give, and we want to adhere to our standards and protocols. (Participant 3)*

> *... We had a different understanding of the consent and then the consent in preparation they have different understanding too ... So that will just delay the treatment, utility, and flow of services. (Participant 6)*

The participants mentioned the importance of uniform practice to be legally safe and also in handling instruments and sharps.

Theme Cluster: Appropriate Workflow for Specimen Handling. One of the participants mentioned that the specimen workflow of lymphoma is confusing as it has many tests under one specimen.

> *... I think the practices are quite safe from our side except for technical issues like may be a lot of confusion regarding the lymphoma protocol, which the system can solve it for you. The Information technology (IT) can try and solve it. People are confused because the number of tests under the lymphoma protocol keeps on changing as per the surgeon and there is no lymphoma protocol built-in epic yet here. (Participant 5)*

Theme 4: Time Management. The participants enumerated the importance of time management in the OR. They emphasised that time management should be done without compromising patient safety and staff injury. Time management involves the effective planning and balancing of activities in order to promote satisfaction and health *(Turner, 2006).*

Theme Cluster: Turnaround Time. Five out of eight participants talked about various aspects of turnaround time between two surgeries.

> *... We are after the turnaround time. We are missing something like connection between the nurses and the patients. That could affect the safety of the patient inside the OR. (Participant 7)*

> *... Another thing is time management because there are only three people in the OR we should be able to manage our time when to go for a break. When is a good time and it should not compromise the patient safety? (Participant 1)*

Theme Cluster: Teamwork. According to the participants, teamwork is greatly encouraged as it plays a pivotal role in patient care.

> *... I think that everyone is willing to step out of their immediate role to help someone else. For instance, the circulator is willing to help the anaesthesia team if needed and vice versa. (Participant 8)*

> *... It would be helpful if the preparation nurse would bring the first patient to the room, then at least we can save time. We have more time to prepare the room instead of one person going out of the room getting this patient. (Participant 6)*

Theme Cluster: Instrument Reprocessing. The staff pointed to the reprocessing of instruments, especially during busy days. This can prevent delays. The instruments should be fast-tracked during busy schedules.

> *... If your institution has a lot of volume of cases and all are laparoscopy imagine if you have three rooms running and all of this have just 10 cameras, how can you deal with it? You need to fast track it every now and then. So that it is one of the responsibilities of theatre nurse to make sure to fast track it. (Participant 4)*

Theme 5: Staffing Appropriateness. Majority of the participants mentioned about the staffing appropriateness. They affirmed that understaffing and rushing to accomplish tasks with the available staff can place the staff at risk of injuries. Staffing appropriateness is ensuring the effective match between patient needs and nurse competencies. Appropriate staffing is clearly linked to the health of the work environment. It affects everything in the unit, including nurse performance and retention, quality of care, patient outcomes, and hospital costs *(Mitchell et al., 1989).*

Theme Cluster: Adequacy of Staffing. The participants described, when the OR is understaffed, it can affect the overall care of patients such as it reduces the chance of nurses staying with the patient. When there are more things to accomplish, there should be additional staff provided for that OR.

> *... I think if we have more staff at night, it won't be a problem. We could have a thorough assessment of the patient, and we won't be in a hurry to finish the cases. We won't mind that case would extend little bit because there are staff doing that case at night. (Participant 7)*

> *... The policy is 2.5 nurses in the room. That should be the nursing care. Not to do computer work or some other care. But, in our practice, ideally, we must be three nurses in the room as we don't have a technician to help the scrub nurse to open the stuff. (Participant 5)*

Although six out of eight participants talked about understaffing, just one nurse talked about organising of booking of surgeries to save staff.

Theme Cluster: Surgeon Availability. One of the participants highlighted the presence of surgeon during preparation especially while positioning. He emphasised that they should take part in positioning the patient.

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.

How is EN13795 relevant in choosing a theatre textile?
This European standard lists uniform testing methods enabling you to compare material performances from the testing report and make an informative pre-selection of the available fabrics.

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... For patient safety, the surgeon should also be there in positioning the patient because they are the one who knows what position will be needed for the case. So, I think they should be really part of the positioning of the patient. (Participant 7)

Theme Cluster: Health Status of Staff. The participants felt that nurses should be fit enough to carry out patient care. They should get adequate rest and breaks so as to function well.

... First of all, I prepare myself. I go to work in good condition. So, if I am not feeling well, I will not go to work. Because I know that I can't compromise the safety of the patient. So, I make sure that I am well. I am in a condition to go then study the procedure, analyse it and give my 100%. (Participant 4)

... Research has proven that fatigue can impact patient safety, it can impact our reaction time or our concentration level. (Participant 3)

Half of the participants stressed the importance of staff fitness and rest. They said these two can affect patient safety in large proportion.

Theme 6: Staff Education. The participants urged that staff training and education can make the nurses more knowledgeable and enhance their performance. Staff education involves training to improve the performance or knowledge of the employees or workforce or a company *(Turner, 2006).*

Theme Cluster: Staff Training. Although the majority of them pointed the staff training, one participant talked about robotic training, which should be improved to avoid chaotic situations.

... I feel the robotics area needs to be improved upon. We have some good robotically trained nurses here already, but I think the flow needs to be better, more consistent. Set up of the room should be more consistent and less chaotic (cords and equipment mismatched, etc) (Participant 8)

... We do the in-service training every Thursday that gives us updates with the new technologies; at the same time updated in the practice of what we should do, what should not do. (Participant 6)

Among the participants who mentioned about the staff training, one of them stressed the importance of training anaesthesia technicians in patient handling and another one emphasised that staff should be rotated in all specialties in order for them to be familiar in all surgeries.

Theme 7: Communication With and Support to Patient in the OR. The participants talked about the patient's overall experience during the intra-operative period as it can impact patient safety. This has two subthemes: establish a better rapport and empathy with the patient, and proper communication with the patient. Communication involves imparting or exchanging of information by speaking, writing, or using some other medium *(Merriam-Webster, 2018).* Empathy is the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another *(Merriam-Webster, 2018).*

Theme Cluster: Establish a Better Rapport and Empathy With the Patient. The participants affirmed the importance of establishing a better rapport with the patient during intra-operative period.

> *... Try not to leave the patient unattended as much as possible. (Participant 2)*

> *... Make sure that the patient is well padded, comfortable, putting a blanket, making sure, not exposing the patient and putting the gel pad is very important. Just think that the patient is your own relative. (Participant 7)*

Four out of eight participants talked about rapport and empathetic care. They urged to stay with the patients as the environment itself is scary and they do not know what to expect.

Theme Cluster: Proper Communication With the Patient. The participants explained the importance of verbal and non-verbal communication as it relieves stress and anxiety.

> *.... Try to talk to them and ask them how they are feeling, how the day is going. I think it can alleviate the anxiousness. (Participant 2)*

> *You should be making the patient relaxed, make them feel at ease. Even if there is a language barrier, use your non-verbal skills, you can touch them, or you can even just look at them, eye contact. There are always ways, you can smile, you can smile through your eyes, even though you are wearing a mask. (Participant 3)*

Communication with the patient was emphasised by three of the participants. They said communication has the ability to alleviate the anxiety of the patient.

DISCUSSION

Theme 1: Patient Safety

Patient safety was the major theme that emerged from this study, and it showed that OR nurses play a pivotal role in intra-operative patient safety. The OR nurses consider that the intra-operative safety of patients depend on the overall intra-operative nursing care as nurses are in close proximity to patients. Also, nurses can act as advocates when the patients cannot do for themselves. These findings co-incide with the result of a previous study, which points out that intra-operative nursing care creates confidence-based relationship and event-related well-being. It ensures persistent well-being and safety by keeping a watchful eye. Thus, strategies should be designed to make a safe environment that enhances wound healing, recovery, and well-being *(Kelvered et al., 2012).* Moreover, frontline employees including nurses are in the best position to watch and distinguish concealed preconditions that inadvertently advance from anticipated behaviours *(Graling & Sanchez, 2017; Gutierres et al., 2018).*

The findings of the present study also emphasise that in all aspects of intra-operative practice, nurses have to make sure that the patient safety is the main goal, and nurses are responsible for preventing injuries and promoting patient safety. Likewise, *Cole et al. (2013)* concluded that recognising and correcting an inaccurate count is a basic segment of OR nurse's duty. The present study also affirmed

that adherence to universal protocol is a crucial component of patient safety. Similarly, *Collins et al. (2014)* also declared that checklists alone cannot counteract all errors. In addition, effective comprehension of the nature of gaffes, perception of the intricate dynamic between frameworks and people, and making a just culture support a common vision of patient safety. Furthermore, the Association of peri-operative Registered Nurses (AORN) recommends to articulate commitment to safety at all levels of the organisation. Safety must be valued as the top priority in every healthcare organisation and incentives and rewards must be provided to promote patient safety culture. In addition, AORN recognises that the patient safety initiatives will fail in the absence of viable safety culture (AORN, 2006).

Theme 2: Pre-operative Preparation

In the current study, the participants mentioned that everything should be set up for the surgeries including the materials and equipment in order not to delay things. These study results are in line with previous study conducted by *Rose (2010),* which concluded that pre-operative planning can improve surgical results and counteract unexpected issues; it improves correspondence with different individuals from the surgical team. Moreover, with insightful planning, suspensions and misperception can be effectively evaded. Additionally, *Boggs et al. (2019)* warrant that the hospitals are intricate frameworks and OR administration is centred on cost reduction to create efficiencies that offers value-based care, forms value control actions that support efficiencies, and improve patient access to core services. Likewise, the AORN emphasises the need for on-going education about disinfection and sterilisation techniques to improve the understanding of the improper instrument handling *(Goss, 2012)*.

The participants in our study mentioned that the instruments and equipment should be available and ready according to the specified surgery before wheeling the patient to avoid harm. *Weerakkody et al. (2013)* confirmed that there is clear advantage in the utilisation of pre-operative checklist-based frameworks, by which an enormous extent of equipment-related errors can be decreased. Our study highlights that the pre-operative assessment prior to intra-operative phase is vital. Consistently, *Malley et al. (2015)* affirmed that OR nurses continually watch out for the patient and the nurses assumes a significant role in distinguishing patients' needs and hazard factors that may influence the surgical outcome.

Theme 3: Standardisation of Practice

In the current study, almost all the participants said that the staff from different backgrounds of practice must be trained to provide uniform care to the patient. The practices must be based on policy and protocol of the hospital, and it is vital for patient and staff safety. Having an institutionalised policy that speaks to the best practices is an initial move towards accomplishing patient safety *(Norton et al., 2012)*. Moreover, if the staff grasp and follow institutionalised and proficient procedures, they can counteract potential negative incidences and lead to clinical enhancements *(Shirey & Perrego, 2015)*. Standardised care at the minimum in the healthcare facility can lessen or eradicate workarounds by reaching consensus among care providers *(Gurses et al., 2012).*

The current study suggested that uniform standards and protocol be followed by all the staff. Consistently, Brown-Brumfield and Deleon (2010) concluded that the surgical team members are in charge of utilising every single sensible measure to secure the patient. Established guidelines, best practice proposals, and

protocols are accessible and ought to be constantly pursued to diminish the probability of medication labelling mistakes and harm to the patients who depend on care provided by the nurses. *Benze et al. (2021)* very recently published 18 peri-operative nursing scope and standards of practice that can be utilised by the nurses to follow the uniform standards of peri-operative nursing practice.

The participants of the present study proclaimed that the appropriate workflow of specimen is essential and communication between surgical and laboratory team is vital for proper specimen handling. This finding is in line with the study conducted by *Tracey Lee Rn (2015),* which concluded that the specimen collection process depends on a human capacity, which makes it susceptible against human components and administrative impacts like time pressures. Institutionalising a procedure, for instance, takes consistency into consideration and sets a standard by which desires for training are set.

Theme 4: Time Management

The OR nurses in this study reported that nurses should manage their time in the workplace without compromising patient safety. They also mentioned, rushing to have quick turnaround can be injurious to staff and patients. Those findings are corroborating with findings from the literature, which concluded that the peri-operative environment is one of the most challenging environment for nurses because of patient acuity, high-stress environment, production pressures, and risk of physical harm *(Morath et al., 2014).* The participants in the study declared that complex cases cannot have 30 minutes of turnaround time. These findings were in line with previously described findings of *Morgenegg et al. (2017),* which concluded that OR turnaround times were essentially influenced by the time of the surgical procedure, age of the patient, staffing changes, length of the surgery, and the utilisation of equipment and materials requiring additional preparation time.

This study is consistent with the reviewed studies conducted on the surgical technologist's perception of teamwork and the culture of safety in the OR in Trident University International. The discoveries of the study demonstrated that teamwork had a noteworthy constructive outcome on the culture of safety. Teams with learning, specialised and non-specialised aptitudes, and safety attitudes are significant for the result of the culture of safety *(Murphy, 2018).* The qualitative analysis in this current study suggested that during busy schedules, fast-tracking of the instruments has to be made sure to avoid any delays. This co-incides with the study conducted by *Weart (2014),* which concluded that the management of surgical instruments reduces the incidence of Immediate-Use Steam Sterilisation that is critical in the success of OR, which can positively impact patient safety goals. Improved communication and co-ordination between the OR and sterile processing unit must occur to bring the process under control. Understanding, managing, and improving the instrument reprocessing can have a positive impact on the safety of patients and prevents delays.

Prolonged work periods without adequate rest may contribute to diminished performance by peri-operative personnel, placing both patients and workers at risk. AORN guidance statement of safe on-call practices in peri-operative practice settings may assist managers and clinicians in developing policies and procedures for safe call practices *(AORN, 2005a, 2005b).*

Theme 5: Staffing Appropriateness

In the current study, the participants debated that adequacy of staffing is crucial. When the OR is under-

staffed and there is rushing, it can affect patient safety. These findings are in line with the findings of *Tørring et al. (2019)* who reported that, in surgical teams, healthcare experts are exceptionally reliant and work under time pressure. It is of specific significance that collaboration is working well, so as to accomplish quality treatment and patient safety. One study also affirmed that Extreme workloads may expand patient safety dangers, and patients are adversely influenced *(Yu et al., 2019).* The findings of Weart (2014) also affirmed that inadequate staffing can cause personnel to rush, make errors, and possibly curtail established hospital procedures. Therefore, AORN guidance statement on peri-operative staffing warrants the peri-operative nursing leaders to develop effective staffing plan relative to surgical patient's needs *(AORN, 2005a, 2005b).*

Nurses involved in the research conveyed that the health status of the staff is vital. Nurses should be fit to work, and staff fatigue can harm the patient. This is similar to the findings of the study conducted by *Seyman and Ayaz (2016).* It states that the OR can cause numerous dangers to patient and staff safety. It is suggested that in-service training on patient and staff safety issues ought to be expanded, measures ought to be taken against dangers in the OR, and the quantity of OR nurses and assistants ought to be expanded. This study agrees with the findings of *Pashley (2012)* who highlighted that burnout can negatively affect an individual's relationships, health, and job. If registered nurses experience burnout, incidents of sentinel events or medical errors could occur and affect patient care.

Theme 6: Staff Education

Throughout the interviews, staff training was defined clearly by most of the participants. They agreed that nurses must have adequate training related to the nursing profession, which can enhance their performance and make them more knowledgeable. These findings are in coherence with the findings of *Ugur et al. (2016),* which depicts that surgical complexities on account of medical errors can be diminished when OR staff individuals are trained in patient safety. A previous quasi-experimental study conducted by *Sousa et al. (2015)* portray that it is the nurse's responsibility to be continuously up-to-date with scientific knowledge, and to disseminate this knowledge among their staff in order to upgrade the skills of the professionals, so that in this way, the patients can be assisted with excellence.

Theme 7: Communication With and Support to the Patient in the OR

The participants of this study explained that nurses have to communicate and establish better rapport and empathy with the patient. A study conducted by *Norman et al. (2016)* on Creating healing environments through the theory of caring declared that making a trusting association with patients enables nurses to better care for them when they are at their most susceptible condition. Building up a believing relationship can be troublesome in the peri-operative care as the patient's emotional condition and nervousness levels before and after surgery vary.

Nevertheless, another study conducted on the Responsibility for patient care in peri-operative practice by *Blomberg et al. (2018)* also declared that a typical duty in the surgical team is to take good care of and not relinquish the patient. In circumstances where patients show vulnerability about the sickness and have a need to talk before the operation, the members recounted a longing to make themselves accessible *(Kelvered et al., 2012).* More recently, the new AORN *Guideline for team communication* provides guidance on using standardised processes and tools to improve the quality of team communication: the key points address hand overs between phases of peri-operative care; a briefing to

share the surgical plan; a time out to verify the correct patient, procedure, site, and side; and a debriefing to discuss what was learned and how to improve *(Link, 2018).*

STRENGTHS OF THE STUDY

This is the only study conducted in the United Arab Emirates to explore the understanding of the OR nurses regarding their role and responsibilities for patient care and safety in the intra-operative practice. A qualitative descriptive exploratory approach was identified as more suitable to gain insight into the participant's understanding rather than testing research idea.

Semi-structured, exhaustive interviews helped the researcher to explore the OR nurses' understanding of their role and responsibilities for patient care and safety in intra-operative practice. The information obtained by the researcher from each nurse was of great value in terms of intra-operative patient safety. The author used several strategies to ensure methodological rigour and minimise bias such as pilot interviews, data saturation, and member checks. One of the biggest strengths of this study is the consistency of findings identified by the participants. The themes identified were mentioned by most of the participants. This gives a strong meaning to the findings.

LIMITATIONS OF THE STUDY

Being a small-scale qualitative study, this research has some limitations. The findings in the General Surgery OR may not be applicable to other OR such as Cardiology, Neurology, and Ophthalmology where the workflow varies slightly from the general surgery OR. The present study did not include surgeon, anaesthesiologist, or anaesthesia technicians as the aim was to explore the understanding of OR nurses regarding their role and responsibilities for intra-operative patient safety. However, these professionals could be included in studies in the future. As a novice qualitative researcher, the principal investigator had initial difficulty in the in-depth interviewing process and coding, which was guided and supported by the supervisor.

IMPLICATIONS FOR PRACTICE

Based on these findings, as well a growing body of related literature, the nursing leadership should consider that in the study setting, despite the environment being safe and the quality of care is high, there is always room for improvement and processes. They should work on improving these aspects of care with more adaptive methods of patient safety. These study findings highlight the quality of speak-up culture of nurses when patient safety concerns arise. Speak-up culture could strengthen patient safety by guarding against mistakes and identifying and solving errors. It is imperative that nurses know and implement the most current evidence to prevent harm to patients and promote the best possible outcomes.

The present study findings affirm various nursing skills for patient safety in intra-operative practice. Nurses have to possess the ability to be efficient in knowledge and skills to render safe patient care. Also, they have to work in harmony with the other members of the surgical team to deliver optimal patient safety. The findings of this study described some of the hurdles in intra-operative patient safety such as staff

shortage and time pressure. If the nursing management reviews the finding, it could help to reduce the work overload and improve patient safety and quality of care.

RECOMMENDATIONS

The findings of this study could influence the clinical education, practice, and future research. The nursing leadership should encourage a safe environment for the patients and caregivers by establishing standardised, consistent, and measurable tools and processes to anticipate and prevent patient harm. The OR nurses should report any errors and near misses so that the OR department together with other team members could work on the aftermath of the unsafe incidences, near misses, and improve patient safety by identifying and preventing errors.

Trust is the cornerstone for patient safety and quality care. Creating a culture of safety by encouraging raising concerns and being transparent is vital in intra-operative nursing care. For future research, it is recommended to apply and assess the great practices offered in this research through an intervention to improve a safe environment in the OR. Also, it is hoped that this study will provide a catalyst for future investigations and interventions hat will maximise patient safety.

CONCLUSION

The issues identified by the participants in the study are directly linked to patient safety but not all are under nurse's responsibility. Also, some of the identified themes reflect the OR nurses' understanding over other issues mainly connected to patient experience. Therefore, the aim of this study is achieved as all the themes identified as nurses were able to express their thoughts on their roles and responsibilities towards patient safety in their practice. There are opportunities for improvement based on the study findings even in a safe and high quality of care OR department. As nurses are the ones with more proximity to patients, they are in a privileged position to identify issues related to patient safety and quality of care.

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Professional Quality Of Life Of Nurses In Critical Care Units: Influence Of Demographic Characteristics

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Background: Professional quality of life, measured as compassion satisfaction, is a prerequisite for nurses working in intensive care units (ICU) where patients rely on their care. Nurses who experience compassion satisfaction, or good professional quality of life, engage enthusiastically with all work activities and render quality patient care. In contrast, compassion fatigue eventually leads to disengagement from work activities and unsatisfactory patient outcomes. In this study, we described the demographic factors influencing professional quality of life of intensive care nurses working in public hospitals in Gauteng, South Africa (SA), during the first wave of the COVID-19 pandemic.
Objective: To describe the demographic factors associated with professional quality of life of critical care nurses working in Gauteng, SA.
Methods. In this cross-sectional study, we used total population sampling and invited all nurses who had worked for at least one year in one of the critical care units of three selected public hospitals in Gauteng to participate. 154 nurses responded and completed the ProQol-5 tool during the first wave of the COVID-19 pandemic. Data were analysed using descriptive and inferential statistics.
Results. The nurses' average age was 45 years, and 59.1% (n=91) had an additional qualification in critical care nursing. Most of the nurses had a diploma (51.3%; n=79), with a mean work experience of 12.56 years. The main demographic variables that influenced professional quality of life were years of work experience (p=0.047), nurses' education with specific reference to a bachelor's degree (p=0.006) and nurse-patient ratio (p<0.001).
Conclusions. Nurses working in critical care units (CCU) in public hospitals in Gauteng experienced low to moderate compassion satisfaction, moderate to high burnout, and secondary traumatic stress, suggesting in compassion fatigue. The high workload, which may have been associated with the COVID-19 pandemic, influenced nurses' professional quality of life.

INTRODUCTION

Caring is an essential value in nurses' personal and professional lives[1] and a complex part of professional nursing practice. The quality of patient care and outcomes largely depends on a caregiver's professional quality of life (QOL). Nurses who have a positive professional QOL experience compassion satisfaction, while negative professional QOL is called compassion fatigue, which can be subdivided into burnout and secondary traumatic stress[2]. Behaviour and the trends resembling low professional QOL in the nursing profession as a whole have been reported in South Africa (SA)[3, 4], and other countries such as the USA[5].

The QOL of nurses working in CCUs are of special concern, as the patients they care for are at high risk for actual or potential life-threatening health problems and require intensive and vigilant care[6].

Critical care nurses gain satisfaction from giving compassionate care to patients and their families, but are prone to compassion fatigue as a result of repeated exposure to traumatic events[7]. CCUs are stressful working environments for healthcare workers owing to high morbidity and mortality rates, as well as ethical dilemmas that healthcare workers face on a daily basis[8]. The stressful environment was aggravated by the COVID-19 pandemic, described by the World Health Organization (WHO) as a global health crisis. The pandemic caused an increase in number of admissions to CCUs, with healthcare organisations being overwhelmed by patients with COVID-19[9]. During the initial response to COVID-19 there were rapid protocol changes, and an increase of infection rates and deaths among patients and nurses infected with the virus[10].

The chronic exposure to complex and demanding work issues in caring for critically-ill patients in often resource-constrained CCUs, exacerbated by the COVID-19 pandemic, increases the risk for nurses to develop compassion fatigue[11]. This could cause nurses to leave the profession, causing increased turnover of CCU nurses, that may lead to increased healthcare costs, decreased productivity, low staff morale and an overall reduction in the quality of care provided[12]. During day-to-day clinical practice we observed nurses working in three selected CCUs (prior to the outbreak of the COVID-19 pandemic) as being disengaged from their work environment and patient care, with high absenteeism rates and late-coming becoming a trend. We observed behaviours and trends associated with compassion fatigue, as described by other authors[3, 5]. In this article, we determine whether certain demographic variables are associated with professional QOL of CCU nurses in public hospitals in Gauteng, SA, during the start of the COVID-19 pandemic.

METHOD

Study setting and design

This cross-sectional study was conducted in eight CCUs of three selected public hospitals in the Tshwane region of Gauteng Province. The hospitals were selected as they employed the majority of critical care nurses in the Tshwane region. Table 1 gives a summary of the number of beds in the selected CCUs. The study was conducted from January to May 2020 during the first wave of the COVID-19 pandemic in SA. In many countries around the world, the COVID-19 pandemic has exacerbated the workload in CCUs[13], potentially affecting staffing and impacting the professional QOL of nurses.

Table 1. Summary of the number of beds in selected CCUs

Hospital	Type of CCU	Beds, *n*
A	General	25
B	General	12
C	Neurosurgical	10
	Trauma and general surgery	15
	Medical	16
	Cardiothoracic	8
	Coronary	9
	Paediatric	9

Table 2. Summary of the cut scores for the ProQual tool[15]

	Cut scores		
Subscales	Low	Moderate	High
Compassion satisfaction	≤40	43 - 56	≥57
Burnout	≤18	43 - 56	≥57
Secondary traumatic stress	≤42	43 - 56	≥57

Study population and study procedure

We sampled the total population[14], of the 225 nurses that worked in the selected CCUs, including registered nurses specialising in critical care (115), registered nurses (86) and enrolled nurses (24). The population included all full-time employed nurses working in the selected CCUs for more than one year and who were willing to participate. Data were collected using the standardised Professional Quality of Life 5 tool (ProQoL-5), an English questionnaire with 30 items in the format of 5-point Likert scale questions, with answers ranging from 1 (never) to 5 (very often)[15]. The ProQoL-5 is a validated tool that measures a participant's feelings or experiences of compassion satisfaction (10 items) and compassion fatigue (burnout (10 items) and secondary traumatic stress (10 items)). The scores for the three sub-scales are calculated on the 50th percentile and range between 43 and 57.

Table 2 summarises the cut scores used by the ProQOL-5 tool to determine the three subscales of professional QOL. The questionnaire, which can be completed within 15 minutes, has been extensively tested, and has a reliability co-efficient of 0.92 for compassion satisfaction, 0.84 for burnout, and 0.87 for secondary traumatic stress[16].

Ethics approval was obtained from the Faculty of Health Science Research Ethics Committee of the University of Pretoria (ref. no. 491/2019), and the Department of Health, as well as the three selected public hospitals. Following ethics approval, we conducted information sessions with the unit managers and potential participants in each CCU to introduce and inform them of the aim of the study. We left 225 information leaflets and anonymous questionnaires to be voluntarily completed when and where convenient. The completed questionnaires were posted into a sealed container situated in the CCU unit managers' offices. Data were collected from January to May 2020, during the first wave of the COVID-19 pandemic. The time for data collection was extended to provide all the nurses an opportunity to participate and to ensure that we did not overwhelm them during the crisis.

Statistical analysis

Data were captured in Excel (Microsoft, USA) and analysed in collaboration with a statistician (JJ) using SPSS Statistics 27 (IBM, USA), and password protected. Data were analysed using frequencies and descriptive statistics including medians, means and standard deviations (SDs). We calculated total scores for each subscale using the Concise ProQoL-5 manual[15]. The subscales were transformed into standardised t-scores and categorised using the cut scores for the ProQoL-5. Cronbach's α was computed to assess the internal reliability of the subscales. The Shapiro-Wilk test was used to test if the data were normally distributed. Non-parametric Kruskal-Wallis tests were used to compare the median scores for the professional QOL in terms of compassion satisfaction and compassion fatigue (burnout and secondary traumatic stress) across selected demographic variables.

Results

We had a 68.4% response rate, and of the total of 154 questionnaires returned, 26.0% (n=40) were from hospital 1, 33.8% (n=52) from hospital 2 and 40.3% (n=62) from hospital 3. Cronbach's α revealed good internal reliability for the subscales: compassion satisfaction α=0.909; burnout α=0.805 and secondary traumatic stress α=0.797.

Demographic information

The respondents (n=154) had a mean (SD) age of 45 (9.59) years, ranging from 25 to 64 years old. Respondents reported having worked at the CCU for an average of 12.56 (7.76) years, ranging from 1 to 35 years. Respondents indicated that they cared for an average of 2.21 (1.30) patients per shift. Table 3 lists the nursing qualifications of the participants.

Table 3. Summary of the participants' nursing qualifications (*N*=154)

	n (%)
Nursing qualification	
Critical care nurse	91 (59.1)
Registered nurse	43 (27.9)
Enrolled nurse	20 (13.0)
Highest qualification	
Diploma	79 (51.3)
Bachelor's degree	66 (42.9)
Master's degree	8 (5.2)

Table 4. Summary of the subscale frequencies

Subscales	Low, *n* (%)	Moderate, *n* (%)	High, *n* (%)
Compassion satisfaction	47 (30.5)	70 (45.5)	37 (24.0)
Burnout	41 (26.6)	71 (46.1)	42 (27.3)
Secondary traumatic stress	33 (21.4)	78 (50.6)	43 (27.9)

Professional quality of life

The descriptive statistics revealed that the majority of participants experienced low to moderate compassion satisfaction, compared with moderate to high burnout and secondary traumatic stress. Table 4 gives more detailed results.

For compassion satisfaction, 30.5% (n=47) of participants scored below 44; 45.5% (n=70) scored between 44 and 57 and 24.0% (n=37) scored higher than 57, with a median score of t=51.75. For burnout, 26.6% of participants (n=41) scored below 43, 46.1% (n=71) scored between 43 and 56, and 27.3% (n=42) scored higher than 56 with a median of t=48.8. For secondary traumatic stress, 21.4% of participants (n=33) scored below 42, 50.6 (n=78) scored between 42 and 56, and 27.9% (n=43) scored higher than 56, with a median of t=51[35].

We compared the professional QOL subscales - compassion satisfaction, burnout and secondary traumatic stress across demographic variables (See Table 5). Professional QOL subscales did not differ for nurses of different ages or nursing categories. More experienced nurses reported higher compassion satisfaction (p=0.047), while more educated nurses experienced greater secondary traumatic stress (p=0.004). Dunn's post hoc tests for multiple comparisons revealed that nurses with bachelor's degrees had higher secondary traumatic stress subscale scores than nurses with diplomas (p=0.006).

Table 5. Demographic profile and professional quality of life subscales of nurses working in critical care units in public hospitals in Gauteng Province, South Africa

Demographic variables	Compassion satisfaction (*p*-value)	Burnout (*p*-value)	Secondary traumatic stress (*p*-value)
Age	0.098	0.104	0.066
More years of experience	0.047*	0.247	0.098
Nursing category	0.054	0.445	0.146
High qualification	0.908	0.630	0.004**
Number of patients cared for per day	0.007**	0.003**	<0.001**

*Significant at the 5% level.
**Significant at the 1% level.

All three subscales of the professional QOL were influenced by the number of patients nurses cared for per day. Nurses caring for only one patient had higher median compassion satisfaction scores (median t=56.27), compared with the nurses who cared for more than one patient (median t=50.46). Nurses who cared for one patient only had lower scores for secondary traumatic stress (median t=42.0) compared with nurses who cared for more than one patient (median t=53.04). Nurses caring for only one patient had lower scores for burnout (median t=42.93) compared with nurses who cared for more than one patient (median t=48.80).

DISCUSSION

In this study, we measured the professional QOL of nurses working in CCUs in three selected public hospitals in Gauteng, SA. Data were collected during the first wave of the COVID-19 pandemic in SA. Our results indicate that the professional QOL of nurses working in CCUs at the start of the pandemic was low. Nurses working in CCUs experienced low to moderate compassion satisfaction and moderate to high burnout and secondary traumatic stress. These findings confirm conclusions reported in a systematic review done by Alharbi *et al.*[17] and a meta analysis by Sinclair *et al.*[18] In addition, the COVID-19 pandemic has had a significant influence on nurses' professional and personal life, increasing the risk of developing compassion fatigue[19, 20].

Caring for critically ill patients in highly stressful environments may put nurses at risk of developing compassion fatigue. The CCU environment exposes nurses to high patient morbidity and mortality, challenging daily work routines, excessive workloads[20], conflicting professional relationships, emotional challenges and moral distress[21, 22]. The CCU environment was further complicated during the early stages of the COVID-19 pandemic as critical care nurses were required to triage patients and decide on modalities of care that increased their moral distress[23]. The results indicated that nurses in our sample were already presenting with moderate compassion fatigue, and the COVID-19 pandemic may further compromise interpersonal relationships, reduce productivity, decrease personal achievement, and increase absenteeism and high turnover[24, 25].

Professional QOL may be influenced by demographic characteristics, suggesting that intrinsic qualities may affect how nurses cope in stressful environments. In our study, professional QOL was not associated with age, although conflicting reports about the influence of age exist[26]. A study conducted in the UK on the critical care workforce, including nurses, found that ProQol-5 scores were not influenced by age[27]. In the USA, Sacco and Copel[28] reported that older nurses (50 years or older) had higher compassion satisfaction. In Venezuela, nurses who were older than 40 years reported a healthier professional QOL, although they were more prone to burnout[29]. In Australia, younger nurses had higher burnout scores, but age was not associated with secondary traumatic stress[30].

Years of experience and nursing category may influence professional QOL. In our study, nurses with more years of experience had higher compassion satisfaction. Compassion satisfaction was similar across the different nursing categories. Our findings concur with previous studies reporting that nurses with more years of working experience tend to have higher levels of compassion satisfaction, which may be due to their level of knowledge and coping skills[31]. In our study, all nurses suffered the same levels of burnout and secondary traumatic stress irrespective of age and category. Other studies have reported that

burnout was more common in experienced nurses because of their work responsibility[30, 32]. Austin *et al*[33]. also reported that years of experience had no influence on secondary traumatic stress. Public healthcare settings in SA have been shown to be high-stress environments, which may have resulted in nurses not being able to cope, irrespective of their experience or category.

The ability to function in a stressful environment may be linked to education. In our study, nurses in the CCU who had a bachelor's qualification scored higher on the secondary traumatic stress subscale than nurses with a diploma qualification, suggesting that nurses with diplomas may be more prepared to cope in a stressful environment. Other studies have reported that nurses with a bachelor's degree had lower compassion satisfaction than nurses with master's degrees[28]. In other studies, educational level had no effect on compassion satisfaction, compassion fatigue and burnout[30].

Higher education levels have previously been associated with higher levels of compassion satisfaction and reduced levels of compassion fatigue[18]. Education levels may influence healthcare professionals' perceptions of responsibility and duty towards patients[26]. Most of the nurses who responded in our study were registered nurses (n=134) and 59.1% of these nurses had an additional qualification in critical care nursing. Nurses with additional qualifications in critical care may be better prepared for the challenges experienced in practice, which could allow for a better professional QOL[29, 34]. However, regardless of demographic characteristics, Wu *et al*.[35] have theorised that nurses caring for patients suffering from COVID-19 may be so focused on achieving optimal patient outcomes that their personal care is put on the back burner.

Nurses in our study were exposed to heavy workloads, which is an important factor contributing to compassion fatigue[36]. Nurses reported having to care for more than one patient per shift, which is in contrast to the recommended 1:1 nurse-to-patient ratio for critical care settings[37]. Heavy workload is described as an organisational challenge brought about by having to care for many patients with high patient acuity[1].

As in our study, in healthcare environments where resources and staffing are not ideal, nurses tend to report lower levels of compassion satisfaction[38]. In addition, shift (day and night) work has been found to be directly linked to burnout in nurses[26]. It is possible to enjoy work when a balance exists between a challenging workload and support in the work environment[27]. However, the demographic characteristics that influence the nurses' ability in dealing with the COVID-19 pandemic will only come to light with the dissemination of more research.

CONCLUSIONS

Our results support previously reported findings. Burnout is common among nurses caring for critically-ill patients and organisations should provide support to preserve the nursing workforce. In this study setting, nurses with more years of experience had a better professional QOL. Younger nurses must be nurtured and enabled to develop coping skills when entering the critical care environment. We also noticed that nurses with bachelors' degrees experienced higher secondary traumatic stress, a phenomenon which needs further investigation.

The nurses cared for an average of 2.21 patients per day, which is above the suggested 1:1 ratio in a CCU. To improve compassion satisfaction that promotes quality patient care, health services should optimise efficiency and align resources to promote nurses' well-being. The results give us an important glimpse into the circumstances of nurses working under the extreme stress of a pandemic. Of concern is that the critical care nurses experienced moderate to high burnout and secondary traumatic stress at the start of the pandemic.

This study was conducted during the first wave of the COVID-19 pandemic and the accompanied stressors, uncertainty and increased workload may have limited the participation of nurses, especially in certain CCUs. The participants only represent critical care nurses working in the public hospitals in the Tshwane region. Further research is therefore required to explore the compassion of nurses working in CCUs as the COVID-19 pandemic unfolds, including critical care nurses working in the private sector and in other provinces. Future research should focus on the nurse as 'self', their personal life, and their perceptions of wellbeing, as well as requirements to promote mental health. Quality patient care depends on the professional QOL of nurses, which should be prioritised in all organisations as the COVID-19 pandemic has provided evidence of nurses' irreplaceable contribution to healthcare.

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South African Healthcare Reforms Towards Universal Healthcare - Where To Next?

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Background: The National Assembly approval of the National Health Insurance (NHI) Bill represents an important milestone in healthcare in South Africa, but there are many uncertainties concerning its implementation and timeline. The challenges faced by the South African healthcare system are huge, and we cannot afford to wait for NHI to address them all. It is critical that the process of strengthening the health system to advance universal healthcare (UHC) begins now, and there are several viable initiatives that can be implemented without delay. This article examines potential scenarios after the Bill is passed and ways in which UHC could be advanced. It begins with an overview of the trajectory of health system reform since 1994, then examines the scenarios that may emerge once the Bill is passed by Parliament and makes a case for finding ways in which UHC could be advanced within the country, regardless of any legal or financial barriers that may delay or limit NHI implementation.

INTRODUCTION

The National Assembly approved the National Health Insurance (NHI) Bill[1] on 12 June 2023[2]. The Bill was passed with only relatively minor amendments in response to the concerns raised[3] via the Portfolio Committee on Health's public participation process. This has resulted in a very mixed response, with extensive coverage in media and online platforms. Responses are broadly divided into two camps - those supporting NHI and those against it, some of whom threaten to institute legal challenges to the Bill if it is passed[4]. There is a high level of uncertainty about when and how the necessary reforms to strengthen the health system to move towards universal healthcare (UHC)[5] will be carried out[6]. The present article provides an overview of the trajectory of health system reform since 1994, examines the scenarios that may emerge once the Bill is passed by Parliament and makes a case for finding ways in which UHC could be advanced within the country, regardless of any legal or financial barriers that may delay or limit NHI implementation.

HEALTH REFORMS TRAJECTORY SINCE 1994

The first democratically elected government in South Africa (SA) inherited a healthcare system facing a wide range of challenges[7]. The health system needed to deal with a high and increasing quadruple burden of disease. Although relatively well resourced (8.5% of gross domestic product), resources were inequitably distributed across a two-tiered public and private system. The public sector was characterised by weak and uneven leadership and management capacity, provincial fragmentation, inequality and inefficiency in resource distribution across provinces and levels of care. The private sector was well

resourced, but fragmented, expensive and highly inefficient. The government set out to address these challenges by committing to the Sustainable Development Goals (2015)[8] and to UHC (2019)[5], setting three main objectives for the health system (and the reform process):

(i) To ensure equity in access to health services: everyone who needs services should get them, not only those who can pay for them;
(ii) The quality of health services should be good enough to improve the health of those receiving services; and
(iii) The cost of using healthcare services should not put people at risk of financial harm

To achieve these objectives, the government embarked on a reform process driven by commissions and committees supported by domestic and international technical assistance, funded by multiple donor partners. The agendas, mandates and membership of committees varied over time[9]. The focus in the 1990s was on introducing social health insurance. This led to some reforms of private health insurance (Medical Schemes Amendment Act No. 131 of 1998), but no wider reforms. With an ANC leadership change in 2007, NHI was tabled as a priority item. Policy documents were published for public debate, including the 2011 NHI Green Paper[10], the 2015 NHI White Paper[11] and the 2019 NHI Bill[1]. While other broader reforms of the health system were considered in earlier policy documents such as the White Paper[11] and the National Health Act No. 61 of 2003[12], more recently the focus of reform has been limited to a single health system financing model (NHI).

Moving toward UHC requires attention to all six of the World Health Organization (WHO) 'building blocks' of the health system (financing, leadership/governance, service delivery, health workforce, health information systems, medical products and technology)[13]. The extended focus on financing reforms has not only failed to deliver meaningful strengthening of the financing component of the health system, but also resulted in neglect of the other building blocks, with serious consequences for the overall capacity of the health system to deliver UHC.

While SA's healthcare spend is greater than that of any other African country, healthcare outcomes are not commensurate with spending[14]. In a WHO assessment of health system performance conducted across 191 countries, the SA healthcare system ranked 175th[15]. Resources in the public sector continue to be inequitably distributed across provinces, districts and levels of care[16]. Evidence of the failures to address or strengthen stewardship, governance, leadership and management is now overwhelming, with corruption and irregular expenditure endemic at all levels of government and of the health system[17, 18, 19]. Many parts of the health system are no longer able to deliver their assigned services, or an acceptable quality of care[20]. This has translated into a huge increase in medico-legal claims. From 2014/15 to 2020/22 medico-legal payouts from all the health departments increased from R0.5 billion to R1.7 billion, and contingent liabilities increased from R28.6 billion to R120.3 billion[21].

The National Department of Health 2030 Human Strategy has highlighted the weakness of health workforce planning in the country, and the fact that despite having higher national health worker densities and salaries than most other African countries, health and health system outcomes in the country are not commensurate with these relative advantages[22]. An integrated national health information system remains a dream. A National Digital Health Strategy[23] was developed - and given some

impetus by the COVID-19 pandemic - but overall implementation progress has been poor. Quality of care in many public facilities is poor or declining, with infrastructure and equipment deteriorating or non-functional, and stock outages a common problem[24]. The high and increasing cost of private sector care led to the Health Market Inquiry, which produced a detailed report[25] documenting challenges facing the private sector and providing practical recommendations to deal with them, but little or no action has resulted.

PASSAGE OF THE NHI BILL AND SUBSEQUENT SCENARIOS

Following approval by the National Assembly, the next step is consideration and approval by the National Council of Provinces (NCOP)[26]. This entails briefing of the permanent delegates in the NCOP and legislature delegates in all the provinces, obtaining public input and comment on the Bill, consolidating the Select Committee's position and obtaining final mandates from the provinces. If the NCOP also passes the Bill, it will be sent to the office of the President for assent and promulgation. If the NCOP does not concur with the National Assembly, the Bill is sent back for further amendments and processing.

Assuming that the Bill is approved by the NCOP and enacted, it will face three challenges to implementation. The first is the threat of legal challenges from a range of stakeholders, including political parties, the private sector, civil society organisations and potentially one or more of the provinces, regarding legal loopholes in the Bill including constitutional infringements[3, 4]. The second, as conceded by Finance Minister Enoch Godongwana[27], is simply the inability to fund such a massive social and structural transformation in a weak and stagnant economy[28, 29]. The third stems from the structural challenges of implementing NHI in an environment of endemic corruption[18] including that in the health sector[19], lack of trust in government[30], a highly divided and unequal society[31, 32], and a health system in which all the building blocks required for successful implementation are severely compromised[24, 33]. The Department of Health has indicated that the laws currently being processed are intended to lay the groundwork for NHI which will be rolled out in phases, starting in 2026 and only expected to be fully realised in 15 to 30 years[26]. Given the challenges, uncertainties and long timelines, it is very difficult to predict what will be implemented and when. Against this background, what are the options for making progress toward the ultimate goal of UHC in the interim?

OPTIONS: WAIT OR DO SOMETHING NOW?

The first option is to continue with the *status quo* until the NHI is finally approved and implementation begins. The underlying rationale for this approach is that:

(i) NHI will be approved and any potential legal challenges to the Bill will be dismissed; and

(ii) NHI will provide the 'silver bullet' for resolving all the health and health systems issues the root cause of all the current challenges faced by the SA health system. This is largely the approach adopted since NHI came to dominate the reform agenda ~10 years ago. This approach has arguably stalled efforts to carry out the other reforms required to build and strengthen the health system, and contributed to the neglect and deterioration of both public and private health systems

The second option is to embark immediately on a plan of action to build and strengthen other key building blocks of the health system (regardless of the outcome of the NHI process). The underlying rationale of this approach is that it would assist in:

(i) Making advances towards UHC in the short-to-medium term; and
(ii) Putting in place the other building blocks necessary for successful implementation of NHI once legal challenges are settled. The second should be the preferred option, representing a more pragmatic, lower risk, more achievable, incremental change. Importantly, an immediate plan of action would not preclude NHI but rather create the conditions for a more achievable transition to an NHI-type funding arrangement. It would move away from the sterile and non-constructive 'for vs against NHI' discourse to one that focuses on what can be done now to strengthen health system capacity to achieve UHC, from financing reforms to strategies known to be capable of health system improvement

To illustrate the point we provide examples of possible reforms in five areas that could assist in advancing towards UHC.

- **Progress on urgently needed legislative reform:** The Health Professions Act No. 56 of 1974[34] needs to be reformed to allow for implementation of alternative reimbursement models, group practices etc. The National Health Act No. 61 of 2003[12] needs to be reviewed to address issues including control of central hospitals. The regulations related to the Office of Health Standards Compliance (OHSC) need to be reviewed, to allow the OHSC to play a foundational role in ensuring that our health facilities provide - and keep providing - safe and quality care to all in SA. The Medical Schemes Act No. 131 of 1998 needs to be reviewed to address the extensive recommendations of the Health Market Inquiry (HMI)[25], which to date have had limited implementation. The HMI provided detailed recommendations of specific steps that could be taken to improve the performance, efficiency and sustainability of the private voluntary health insurance market and private healthcare providers. Central to these recommendations was a supply side regulator. The immediate establishment of this regulator would generate sector improvements and would also align with NHI aims: the effectiveness and efficiency of the private sector is important, given the integral role of private sector providers in the implementation of NHI
- **Reforms to processes for improving sound and competent management, administrative and clinical oversight and governance:** Changes take a long time to effect, and we need to start the process by addressing the lack of separation between the political and operational spheres. While policy determination is inevitably a political process, technical competence should be the over-riding concern in the operational sphere, including for all appointments. Much can be learned from the Western Cape Department of Health, which has managed to balance political and operational imperatives better than most of the other provinces and has performed better on key indicators as a result[35]
- **The establishment of a national health information system:** The National Digital Health Strategy[23] needs to be fast-tracked, including implementation of a common health patient registration system and health patient registration number for all residents (both public and private sector users). Only through the establishment of an integrated IT platform can we start capturing the data necessary to plan for the health and healthcare needs of the country. The COVID period generated several innovative information agreements and dashboards that brought public and private sector data together, making information both transparent and useful. Other IT systems (such as the Hospital Emergency Centre Triage and Information System (HECTIS) in Western Cape Province, used to triage and track patient flow through services) are already available to roll out to other areas.

- **Steps to improve prioritisation and use of evidence and analysis to inform decision-making across private and public sectors:** Health technology assessment and evidence-informed design of benefits packages would both contribute to progress towards UHC and generate immediate efficiency, quality and equity improvements. A key driver of sustainability and public trust in NHI will be the technical and procedural competence to define what health technologies and interventions the NHI will offer and for whom. International experience indicates that such systems take many years to develop. A functioning system of prioritisation is a critical element of any sustainable health system, and existing work on this issue can be accelerated regardless of NHI reform progress. In previous work, it became clear that the public sector largely operates according to defined clinical protocols, whereas private sector practices showed much more variation, with influences on practice from professional organisations, clinical networks and international practice[36]. Adopting a set of agreed common protocols and clinical guidelines based on SA-specific evidence of efficacy and cost effectiveness would go some way to standardising quality of care as well as providing a common and recognised medico-legal baseline for clinical practice[37]
- **Learning from health system reform experience within the country and in other countries, particularly low-income and middle-income countries:** We have an existing health system in which some elements and innovations are working very well, and lessons from this success could be applied to other focus areas for improvement or rolled out across more parts of the country. A call to identify such programmes is sure to elicit a long list of examples. Over 70 countries have attempted health reforms in the past decade[38]. While SA has experienced difficulties in rolling out NHI policy, other countries such as Ghana[39] have made significant progress in implementing their reforms and advancing towards UHC. We need to learn from these experiences in shaping our reform process

CONCLUSION

The approval of the NHI Bill by the National Assembly represents an important milestone, but there are many uncertainties concerning its implementation and timeline. The challenges faced by the South African healthcare system are huge, and we cannot afford to wait for the NHI 'silver bullet' to address them. It is critical that the process of strengthening the health system to advance Universal Health Coverage begins now, rather than waiting for NHI to solve all problems. Viable initiatives exist and can be implemented without delay. The adage that UHC is a 'journey not a destination[40]' has never been more relevant, as South Africa resumes this journey.

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Infection Control And Reprocessing Within Healthcare

Every year, hundreds of millions of patients are affected by a healthcare-associated infection (HCAI, HAI or nosocomial infection) worldwide.

A healthcare-associated infection is an infection which patients acquire during their stay at a hospital or other healthcare facility, which was not present or incubated at the time of admission. In the western world, about 8% of the patients admitted to a hospital acquire an infection, in developing countries it is even more.

What causes infections?

Infections are caused by different micro-organisms that are very common within our environment. Most of them are harmless or even good for the human being, but patients within healthcare environments are usually more likely to get an infection from the harmful ones due to underlying illness and/or other factors that has weakened the patient's immune system.

Bacteria

Bacteria multiply by splitting and can be either non-pathogenic (harmless) or pathogenic (causing infectious diseases). Some bacteria can form highly resistant endospores which can only be de-activated

or killed during sterilisation. Bacteria cause infectious diseases such as cholera, anthrax, leprosy, bubonic plague, sepsis and MRSA.

Virus
Virus is simply constructed and isn't classified as a complete cell. For the virus to multiply, it requires another cell that the virus infects. With help from the infected cell's DNA or RNA the virus can split and multiply. Viruses can cause viral infections such as the common cold, rabies, smallpox, measles, HIV, polio, SARS and influenza.

Microscopic fungi
Microscopic fungi are more developed then bacteria and viruses. They are around 20 times larger than bacteria. Most pathogenic fungi require a large number to be able to cause an infection, and often it is required that the person's immune system is weakened. Candidiasis is a number of fungal infections due to a type of yeast called *candida*. Candida causes for example thrush, yeast infections in the genital area and onychomycosis.

Protozoa
Protozoa is a single-celled organism with an animal-like behaviour and one of the micro-organisms that is most highly developed. Protozoa causes diseases such as malaria, cryptosporidiosis and sleeping sickness.

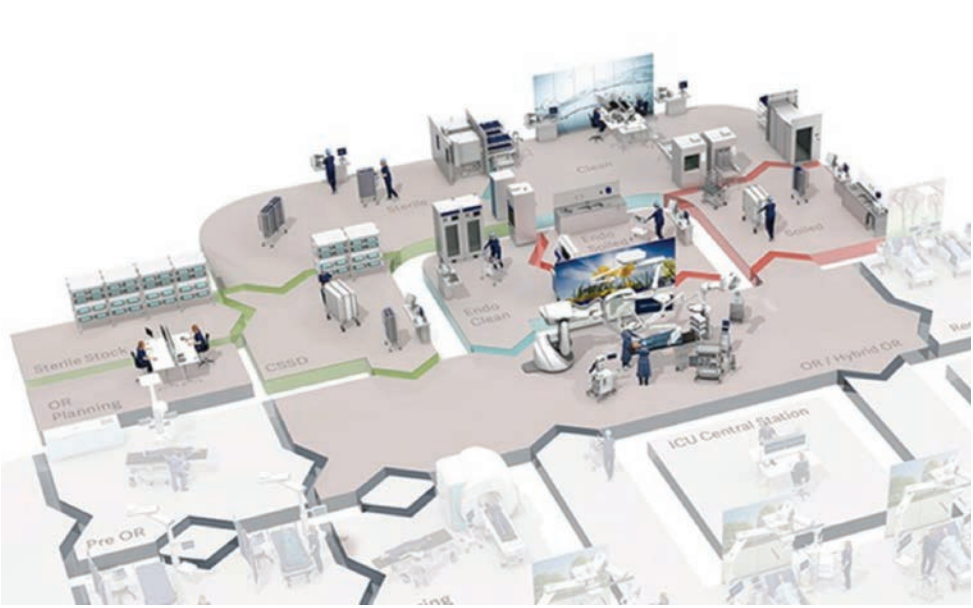
Prions
Prions are infectious particles, which consist of only protein. Prion diseases are caused by a protein adopting an incorrect form. It then serves as a template when it enters healthy protein and changes it in order to reproduce. Prions are very hard to deactivate and WHO recommends combining at least two prion inactivation methods (cleaning and sterilisation). Prions cause mad cow disease (BSE); when humans are infected it's called variant creutzfeldt-jakob disease.

The barrier principle

The goal of infection control is to reduce the number of causative agents. **Getinge promotes the 3 zones - 2 barriers concept** whenever possible. First barrier avoids cross-contamination of goods spread by staff, and the second barrier avoids mixing up clean and sterile goods.

The zones are separated by pass-through washer-disinfectors and sterilisers. Unclean items arrive at the reception area in the same instrument trays, baskets and containers as they were delivered in. After visual inspection, items are either loaded into the pass-through washer-disinfectors or manually cleaned by soaking, and then put into the washer-disinfector.

The clean and disinfected goods entering the area for sorting, inspection and packing are unloaded. Once sorted, inspected and packaged, the goods are ready for sterile reprocessing. Upon sterilisation the goods are stored on racks or in trolleys for further transport within the hospital.



Learn more about the 3 zones of infection control

Cleaning

Cleaning is considered the most important step in the reprocessing process of an instrument or equipment. The purpose of cleaning is to remove visible soil and reduce biological matter and to prepare it for the disinfection process.

Disinfection

The disinfection process reduces the number of pathogenic micro-organisms on the instruments significantly by removing and/or killing them. Bacterial spores are not necessarily killed by disinfection; however the number may be reduced as a result of the cleaning process.

Sterilisation

Sterilisation involves the complete destruction of all forms of microbial life, including bacteria, viruses and spores. To be effective, sterilisation must be preceded by cleaning, the removal of all foreign material from the item, and disinfection, the reduction of pathogen micro-organisms to a level that is not harmful for the health.

Follow the WHO standards

The aim of the manual *Decontamination and Reprocessing of Medical Devices for Healthcare Facilities* is to provide guidance in improving standards in sterile services across healthcare facilities worldwide.

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