

# The Dissector

Journal of the Perioperative Nurses College  
of the New Zealand Nurses Organisation

September 2022, Volume 50, Number 2

## PRECEPTORS' VITAL ROLE IN OR



**PROFESSIONAL**

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**CLINICAL**

**Assessment and management of a patient with diverticulitis**

**EDUCATION: Game-based learning**

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## The Dissector

The official Journal of the Perioperative Nurses  
College of the New Zealand Nurses Organisation  
(PNC<sup>NZNO</sup>).

September 2022, Volume 50, Number 2

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# Conference time – finally!

Tēnā koutou katoa. Welcome to our spring and  
pre-conference issue of *The Dissector*. At the  
end of September we will finally have the op-  
portunity to meet together again at our Perio-  
perative Nurses College (PNC<sup>NZNO</sup>) conference  
in Christchurch. After two postponements, it  
has been a long time since we have been able  
to gather together and I know many of you have  
really missed the opportunity to network and  
catch up. This will be the first time I've attended  
for several years, and I'm really looking forward  
to the occasion. I hope to see you there!

In this issue we have a variety of articles,  
three of which were based on postgraduate  
study. If you are currently studying, please  
consider sharing your learning with your col-  
leagues. Our Editorial Committee members  
would be very happy to help you present your  
findings for publication or convert them into  
an article. The Editorial Committee has been  
struggling to find material for publication so  
would welcome your contributions. The com-  
mittee also has a number of vacancies so please  
consider joining this enthusiastic team.

## The Importance of Preceptors

Sophia Simupande provides an article about  
the vital role of the preceptor in supporting the  
transition of new nurses to the perioperative  
environment. Sophia explains the importance  
of equipping preceptors with knowledge and  
skills on adult teaching methods, socialisation,  
and assessment.

## Diverticular Disease

Our clinical article for this issue is from Devon  
Caffell. Devon provides us with a review of the  
literature on diverticular disease and the as-  
sessment and management of a presenting  
patient. She discusses the best practice for  
assessment and management of this chronic  
health issue.

## Game-based Learning

Ara Cho provides an article about game-based  
learning, known as gamification. Ara contends  
that the current generation of new graduate  
nurses prefer interaction and instant feedback.  
She argues that game-based learning is associ-  
ated with better engagement and motivation  
and encourages critical thinking adult learners.  
Ara suggests that nurse educators may be able  
to use this method as an innovative teaching  
strategy.



## Assessing Clinical Competency in PACU

Susan Cashman, Geeta Chandra and I provide  
an article describing the development and im-  
plementation of a competency assessment  
workbook for staff working in post anaesthesia  
care units at Te Toka Tumai Auckland.

## Reports

We have two education reports provided for  
this issue. Gillian Martin reports on the Brit-  
ish Society of Interventional Radiology (BSIR)  
4th Annual Paediatric Interventional Radiology  
meeting she recently attended. Gill and Shona  
Matthews also provide a report on the recent  
medical imaging education morning, an annual  
activity for the Auckland regional branch.

**Correction:** In our last issue we published a  
research report by Grace Wu on the features  
of an effective orientation programme for new  
graduate and novice operating room (OR)  
nurses. The author wishes to acknowledge Mrs  
Louise Carrucan-Wood and Dr Dianne Marshall  
from the School of Nursing | Te Kura Naahi,  
University of Auckland | Waipapa Taumata Rau.  
They were the academic supervisors of this  
research project.

*Noho ora mai*

*Bron Taylor, Chief Editor*



# The DISSECTOR



## 3 EDITORIAL

Chief Editor Bron Taylor is delighted to be able to finally attend a PNC Conference after a few false starts...

## 6 TABLE TALK

Perioperative Nurses College Chair Juliet Asbery sees exciting times ahead in her farewell.

## 8-10 NEWS

Perioperative Nurse re-elected to NZNO board; Tauranga's Cubro supports Fiji children's hospital; a new hospital for Hawkes Bay; Letter to the Editor; Umano Medical releases new bariatric bed

## 12 CONFERENCE REPORT

Gillian Martin reports from the 4th Annual Paediatric Interventional Radiology Meeting of the British Society of Interventional Radiology (BSIR) Manchester, England.

## 14 REGIONAL REPORT

Shona Matthews and Gillian Martin report on the annual Medical Imaging Education morning run by the Auckland/Northland Region of the Perioperative Nurses College of the New Zealand Nurses Organisation on August 20.

## 16 PROFESSIONAL

Assessment of a nurses' competency to practice independently is essential in a high acuity environment. Bron Taylor, Susan Cashman & Geeta Chandra describe the implementation of clinical competency assessments for staff caring for patients in Post Anaesthesia Care Units at Te Toka Tumai Auckland.

## 19 CLINICAL

Devon Caffell reviews the current literature surrounding diverticular disease and the assessment and management of a presenting patient. Evidence-based articles were utilised to review diagnosis using either computerised tomography (CT) scan or ultrasound and conservative treatment versus surgical treatment.

## 23 EDUCATION

Sophia Simupande discusses the vital role of the preceptor in supporting the transition of new graduate nurses to the perioperative environment, based on a master's practicum project in which she outlines the role of the preceptor and the critical areas that they need to focus on to enhance practice in the perioperative environment.

## 27 EDUCATION

Gamification is believed to promote critical thinking and has become a recent trend in nursing education Ara Cho reviews the literature on game-based learning.

## Touching Base

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### INDEX TO ADVERTISERS

ANSELL: Skin friendly PI gloves .....	13	Fisher & Paykel Healthcare: Humigard .....	11
Business Cards directory .....	29	Jackson Allison: Buffalo Filter VisiClear .....	6
Bamford: Biocare .....	9	Keyport: Sim.Move 800 operating table .....	2
Bamford: HotDog patient warming .....	31	Keyport: Simeon Surgical Lights.....	32
CUBRO Carexia comfort chair & warming cabinets 5		Schülke: MICROSIELD® tried tested trusted.....	7



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## Exciting times ahead



Dear friends and colleagues.  
This will be my last table talk for  
you as Chair of the Perioperative

Nurses College of New Zealand. At our AGM in Christchurch later this month, my friend and respected colleague Cassandra Raj will take over as your new Chair.

We have an exciting time ahead of us as a College. The world has changed significantly since the start of my tenure in 2019. COVID-19 has changed the way that we communicate with each other, learn and carry out our day-to-day lives. As a College, the PNC has recognized this: we are now delivering regular online professional development that allows us to continue growing as nurses. At our Conference this year we will be holding an open forum after the Free Paper sessions. This is the starting

point for us to all start looking at what we want from our College in the future. National Committee very much looks forward to hearing your opinions and ideas at this session. If you take part in this session, you will help your College to move ahead with purpose.

The PNC Conference is an exciting opportunity for us all to reconnect again. The enthusiasm for this face-to-face conference is demonstrated by the excellent number of registrations to date. My thanks go to the Christchurch Conference Organizing Committee for their endurance and enthusiasm — despite multiple delays due to factors beyond their control. They have put together a fantastic programme that is a credit to them all.

It has been my pleasure and honour to be your Chair for the last three years.

I would like to close with my favourite (abbreviated version!) quote from Theodore Roosevelt (1910):

*"It is not the critic who counts... or points out where the doer of deeds could have done them better. The credit belongs to those who strive to do the deeds, who spend themselves in a worthy cause.... their place shall never be with those cold and timid souls who know neither victory nor defeat."*

Best wishes

Juliet Asbery, Chair, Perioperative Nurses College of the New Zealand Nurses Organisation



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# Perioperative nurse re-elected to NZNO board

Simon Auty, who has served on the board of the New Zealand Nurses Organisation (NZNO) since 2019, has been re-elected.

Auty says he wants to ensure the NZNO constitutional review continues and reflects union values rather than the current "corporate model".

The Wellington perioperative nurse was re-elected to the NZNO board on September 9, along with Te Tai Tokerau primary health nurse practitioner Margret Hand and Tairāwhiti clinical nurse manager Anamaria Watene.

Waikato practice nurse Tracey Morgan, NZNO vice-president (2020–2021) and Wellington mental health nurse Grant Brookes, a former NZNO president (2015–2020), were also re-elected to the NZNO board,



In addition, two new directors were elected: Palmerston North mental health charge nurse Saju Cherian and Wairarapa emergency nurse practitioner Lucy McLaren.

Cherian, an immigrant from India, has described himself as a voice for migrant nurses and says his vision for NZNO was for it become a union that "all members feel is their own, irrespective of where they work, their ethnicity of any other differences. McLaren says it is time for nurses to be "more vocal" and for NZNO to be "more open and transparent."

There were 55,326 eligible voters in the NZNO membership: 3492 votes received.

## Tauranga company supports Fiji hospital

Tauranga-based Cubro is supporting a newly opened children's hospital in Fiji that is providing free life-saving surgery. The hospital is the state-of-the-art Sri Sathya Sai Sanjeevani Children's Hospital in Nasese.

Thanks to this new hospital, children born with congenital heart disease in Fiji can now be treated.

Cubro supported the project with clinical design and consulting, a design and installation package for a full medical gas system and the supply and installation of world-class surgical lights and pendants in the theatre where the cardiac procedures are completed. The New Zealand company will also continue to help the team with ongoing service and support.

The Sai Prema Foundation created the world-class facility with the aim of providing the best possible surgery and treatment to the children of Fiji and the Pacific.

About 200 children are born with congenital heart disease in Fiji every year and in the wider Pacific, that number increases to 2500 children. Most of them do not reach adulthood.

Sai Prema Foundation director, Sumeet Tappoo, said the foundation was excited to have the opportunity to save many lives of the children of Fiji and the Pacific.



The theatre where the cardiac procedures are performed features world-class equipment.

"There wasn't facilities anywhere in the Pacific for surgery and treatment of children suffering from congenital heart disease, and it's simply unaffordable for families to take their children overseas." Mr Tappoo said.

Despite the enormous challenges presented by a global pandemic, the Sia Prema team managed to bring in the required specialist equipment and technical expertise from around the world including the USA, Canada, Europe, Singapore, Australia and New Zealand.

## New hospital for Hawkes Bay

Hawkes Bay has a new \$40 million private hospital with capacity to conduct up to 5000 surgical procedures a year. It is Kaweka Hospital in Hastings, officially opened by Minister of Health Andrew Little in July.

The new hospital is at 209 Canning Road, diagonally opposite the Hawkes Bay Hospital's Emergency Department. It will offer a wide range of surgeries and specialist care to help meet demand for surgeries across Hawke's Bay.

The majority of its surgical procedures will be within the private healthcare sector but the hospital has a contract with Hawkes Bay Hospital to conduct around 1200 public procedures each year.

The hospital currently boasts four operating theatres and 10 inpatient beds, each with their own ensuite, with patients beginning to be admitted in late August following the final fit-out and staff training.

Kaweka has a team of 40 surgical and non-surgical specialists including in the fields of ear, nose and throat, general surgery, gynaecology, urology, ophthalmology and gastroenterology. They are backed by a 75-strong team of technicians, nurses, and other staff.

"Kaweka Hospital will ensure more Hawke's Bay residents can get access to surgical procedures faster, which ultimately improves the health and wellbeing of the region," says CEO Dr Colin Hutchison.

"Although the public sector provides the bulk of healthcare, as a partner to Health New Zealand (Te Whatu Ora) we can also provide some public capacity," Dr Hutchison says.

The founders of Kaweka Hospital are a group of clinicians who saw the need to create more operating capacity in the Hawke's Bay region and deliver a patient-centric approach. The board of directors comprises Dr Colin Hutchison (Managing Director and CEO), Dr John Rose (shareholder representative), Conrad Waitoa (Cultural Director), Peter Henseman (Finance Director) and Mr Stephen Toynton (Surgical Director).

Continued on page 10.



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Continued from page 8.

Originally founded as Little Dove Health Care Ltd on April 15, 2019, the company changed its name to Kaweka Health Ltd. on October 2, 2019. The company has 649,600 shares held by 42 entities, all but two of which are from Hawkes Bay.

“At the moment in New Zealand there is a lack of healthcare facilities and this causes challenges for senior doctors who want to provide really good care for their patients. Therefore, as a group of senior doctors in Hawke’s Bay we thought outside of the box to solve the problem. Over the course of the last couple of years we have designed and raised money to build the new private hospital. Although the vision has been forming over many years, we really got going on the project in 2019,” Dr Hutchison adds.

“Kaweka Hospital will ensure more Hawke’s Bay residents can get access to surgical procedures faster, which ultimately improves the health and wellbeing of the region.”

Hastings Mayor Sandra Hazlehurst was delighted to see Kawaka Hospital Open.

“It has been exciting to watch with anticipation the development of this much-needed additional Hawke’s Bay community hospital, which will be vital to the health and well-being of our people, delivering critical services to our people today and for generations into the future.”

The initial \$40 million build is just the first stage. There is a \$60 million expansion planned to be completed by the end of 2024 which is to feature a new radiology suite with MRI, CT and breast imaging as well as a new cardiac catheterisation laboratory.



Dr Colin Hutchison, Managing Director and CEO of the new Kaweka Hospital.

## Bariatric bed with patient care at the forefront

Umano Medical has partnered with Cubro to bring a strong and durable bariatric hospital bed to New Zealand. The ook snow ALL bariatric hospital bed has been designed in collaboration with clinicians, with patient-centred care at the forefront.

Extremely versatile, Umano Medical’s bariatric hospital bed can also be used as a medical-surgical bed or for palliative care, enabling hospital providers to standardise their care beds, reducing the cost of ownership, storage space and equipment handling needs.

## LETTER TO THE EDITOR

### Challenges faced by a sole Māori nurse

I have just read Rangi Blackmoore-Tufi’s article ‘A safe environment for Māori patients starts with a safe environment for Māori nurses’ in the June 2022 (Volume 50, Number 1) issue of *The Dissector* in which she reflects on some of the challenges she has faced being the sole Māori nurse in her perioperative department.

I openly admit I was moved to tears by Rangi’s experience. At the same time I also feel a great personal guilt, as I am like her colleagues. I am an International trained nurse who has worked in New Zealand for 20 years and have very little understanding of Tikanga despite, like Rangi’s colleagues, holding a Practising Certificate. An expectation of this is that I have an understanding of Te Tiri O Waitangi, Tikanga and what it means to the health and care of our Maori patients.

I would like to apologise for this to Rangi and all other Māori nurses for my lack of knowledge and that of my colleagues (in the wider perioperative world).

I would like to thank Rangi for her courage in bringing this to us all and I hope her determination and knowledge carries her forward in her endeavour to inform her colleagues around New Zealand.

Gillian Martin, Auckland

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- Reduces time in recovery<sup>«</sup>

## LONG TERM

- May reduce adhesion formation<sup>Δ</sup>
- May reduce tumour burden<sup>«Δ</sup>
- May reduce tumour metastasis<sup>«Δ</sup>

*« in laparoscopic surgery; # in open surgery;  
Δ as demonstrated in an animal model;  
§ as demonstrated in a wound model.*

Reduction in economic costs

# 4th Annual Paediatric IR UK meeting

By Gillian Martin, RN, PG Dip, VA-BC

After two years of lockdowns and no overseas travel, I recently travelled to the United Kingdom to visit family and friends. Whilst I was there I was able to attend the British Society of Interventional Radiology (BSIR) 4th Annual Paediatric Interventional Radiology Meeting in my home city of Manchester.

The BSIR is the home of image-guided surgery in the UK. It is a charitable foundation, founded to promote and develop the practice of Interventional Radiology (IR). Membership is open to consultant radiologists, registrars, learners, radiographers and radiology nurses.

The BSIR Paeds IR UK 2022 meeting was a multidisciplinary meeting for all those interested in the world of paediatric IR. Its aim was to encourage those considering a career in this field to create a community of support for those who are practising paediatric IR and to provide some insights for those considering extending their adult IR practice to include some paediatric work. It created an opportunity to meet and discuss skills, innovations and debates in this field.

The day was hosted and chaired by members from Manchester Children Hospital and Great Ormond Street Hospital (London) and comprised four sessions:

- Paediatric Interventional Radiology (PIR) in detail;
- Building a Paediatric Interventional Radiology practice;
- Vascular Malformations; and
- How I Do It - quick-fire PIR toolkits.

It commenced with presentations on reno-vascular hypertension in Children, paediatric vascular access, and reducing radiation dose in PIR.

The take home message on paediatric vascular access was CIOLOT:

- C:** Child – age, weight, history, complexity;
- I:** Indication — who's asking, do they know what they want and why it is needed;
- O:** Operator – experienced or trainee, their device of preference, is it appropriate;
- L:** Location / Time – OR or Radiology, elective or emergency;
- T:** Tools – ultrasound, fluoroscopy, micro puncture set, good appropriate guidewire.

## Building an Interventional Radiology suite

The second session concentrated on the environmental aspects of designing and building an Interventional Radiology suite tailored to

the needs of children, their families and their care and treatment. It highlighted the necessity for clinical involvement from the outset of the design process. Involvement should be from all the professional groups within the multidisciplinary team to get a wide range of input and opinions including how we want and need the building to support our work.

“We shape our building; thereafter they shape us” Churchill, 1943.

This presentation by Dr Emma Stockton, an anaesthetist at Great Ormond Street Hospital came about after she was approached to approve the plans for a new operating theatre — a request which she declined. Emma went on to gain her MSc in “Planning Buildings for Health” and change the way we think about our hospital environments.

Dr Stockton is now involved with a group called “Clinicians for Design” who run workshops centred on engaging clinicians in the design and build process. <https://www.cliniciansfordesign.com/>

The afternoon session focused on three types of vascular malformations: lymphatic, venous and high flow. It covered their symptoms, diagnosis, treatment and potential complications.

The day ended with quick-fire topics including Botox injections to counter drooling, splenic cyst ablation, making feeding tube changes easy and non-GA sclerotherapy.

More information about the BSIR is available on their website, including forthcoming events and educational opportunities. [www.bsir.org](http://www.bsir.org)

**About the author:** Gillian Martin is a Clinical Nurse Specialist in Radiology at Auckland City Hospital. She has 33-year nursing experience, the last 30 years of it spent working in Radiology. Gill is Secretary of the Auckland/Northland Perioperative Nurses College Regional Committee, is the Regional representative on the National Committee of PNC and has been an enthusiastic supporter and writer for *The Dissector*. Gillian also serves on the Editorial Committee as National Committee representative and is the current convenor of the PNC Professional Practice Committee.

## References

Sir Winston Churchill, House of Lords, October 28, 1943

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# Medical Imaging education morning

By Shona Matthews & Gillian Martin

More than 40 enthusiastic nurses and medical radiation technologists (MRT) keen to get some education hours attended the Auckland/Northland Region of the Perioperative Nurses College of the New Zealand Nurses Organisation annual Medical Imaging Education morning on August 20.

Obex Medical again supported the Saturday morning with morning tea and welcome organisational support.

## Speaking up for Safety

**Bron Taylor**, Associate Nurse Director, Workforce development, Education and Training, Perioperative Service at Te Toka Tumai Auckland and Chief Editor of *The Dissector* discussed 'Speaking up for Safety'.

Speaking up is critical in a healthcare setting when we have concerns about something affecting the patient or a colleague.

Bron identified some common barriers to speaking up, including uncertainty, assumption that the other staff must know what they are doing, perceived view of hierarchy and cultural and ethnic differences. There may also be fear of humiliation especially if concerns were ignored in the past.

Enablers such as a long-term change in the culture of the OR, a flattening of hierarchy, a shared understanding and a positive reaction to voiced concerns help, as well as the use of briefing tools create the opportunity to ask questions.

Bron demonstrated closed communication and discussed the use of tools such as ISBAR, 'actively listening' to what is being said and importantly what is not being said. The audience also had opportunity to discuss their own experience of speaking out and share these if they wished.

ISBAR For Clear Communication	
I	<b>IDENTIFY:</b> Yourself (name, position, location) & patient
S	<b>SITUATION:</b> Why you are calling (if urgent-say so)
B	<b>BACKGROUND:</b> Tell the story
A	<b>ASSESSMENT:</b> What you think is going on
R	<b>REQUEST:</b> What you want from them

## Patients with 'difficult behaviours'

**Ara Cho**, Nurse Educator Programme Co-ordinator at Te Toka Tumai Auckland presented Caring for Patients with 'Difficult or challenging behaviours' which followed logically on from Bron's presentation.

Ara reminded us that our own set of beliefs, values and attitudes can

be the biggest barrier to communication and our ability to choose or not choose to react emotionally to a potential conflict situation. She discussed the stress response and how this can distort our thinking and ability to respond effectively and ascertain the patient's concerns.

The cycle of escalation was also covered and the importance of identifying when and if the situation is becoming a risk to the personal safety of yourself or others.

Ara also reminded us that communication is comprised of seven per cent words, 36 per cent tone and 55 per cent body language. The acronym CALM (Communication, Assertive, Listening (reflective), Manage the situation) is a useful tool as well as remembering the types of behaviours and verbal styles.

Valuable group discussion followed with some personal experiences shared with the whole audience. The importance of accessing assistance from whanau and at times the referring doctor was identified if no progress was being made.

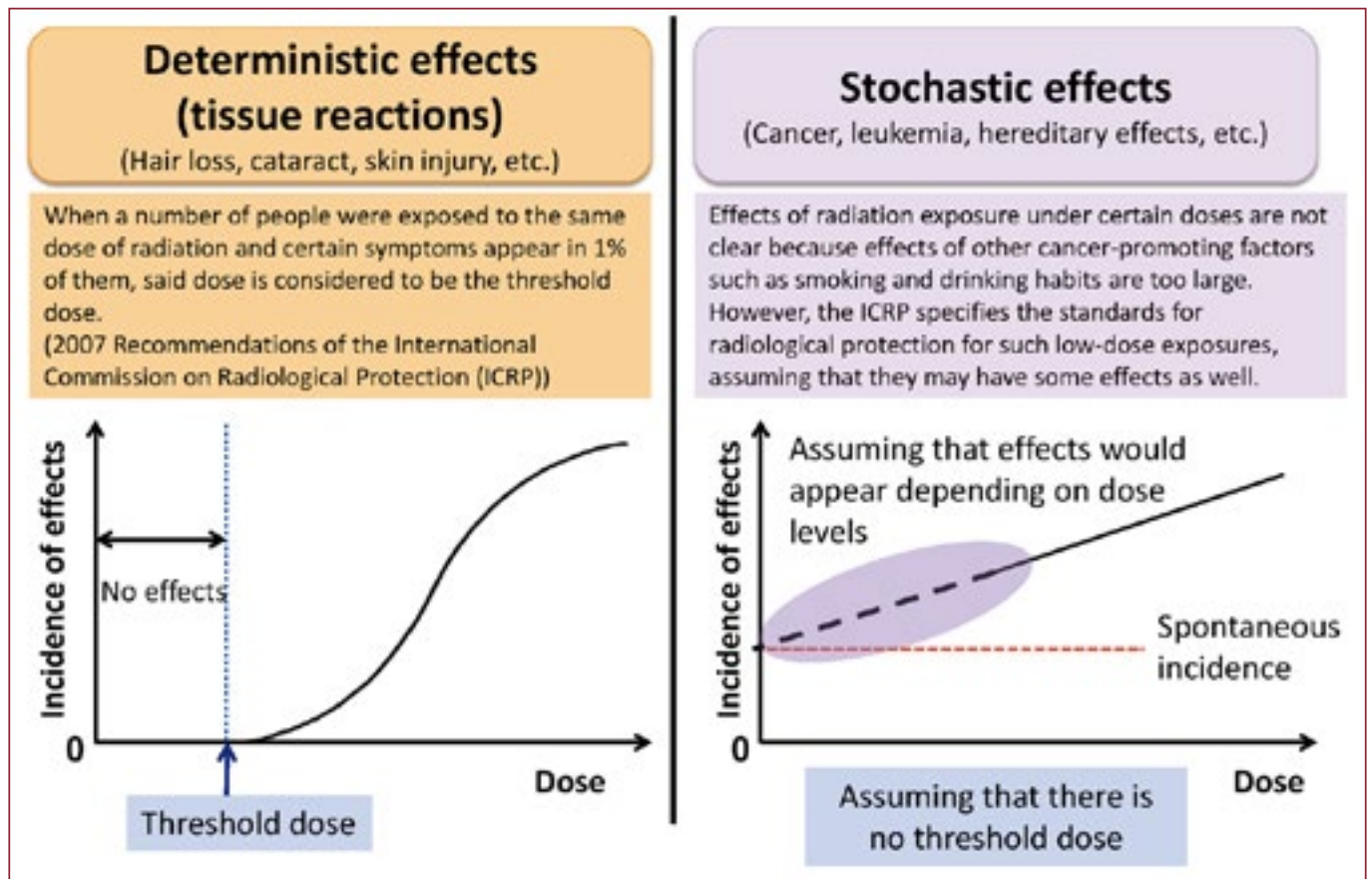
Types of Behaviour			
	Passive	Assertive	Aggressive
Definitions	Communication style in which you put the rights of others before your own, minimising your own self worth	Communication style in which you stand up for your rights while maintaining respect for the rights of others	Communication style in which you stand up for your rights but you violate the rights of others

Types of Behaviour			
	Passive	Assertive	Aggressive
Verbal Styles	*Apologetic *Quietly soft or tentative voice	*I statements *Firm, clear, direct voice	*You statements *Blaming *Loud scary voice *Angry

## Radiation Protection

Following morning tea **Rebecca Wilson**, Clinical Specialist Medical Imaging Technologist (MIT) Interventional Radiology, Te Toka Tumai Auckland provided a valuable refresher on Radiation Protection.

Rebecca provided a brief history of the discovery of X-rays and the early pioneers in the development of medical imaging. She outlined the stochastic and deterministic effects of radiation on the body. Rebecca also reminded us of the ALARA (as low as reasonably acceptable) principal which considers optimisation in relation to a particular practice, the magnitude of individual X-ray doses, the number of people



exposed and the likelihood of incurring exposure.

She also effectively demonstrated the value of distance from the X-ray source. Finally, Rebecca explained the importance of appropriately fitting radiation protection skirts and tops and demonstrated how these should properly fit on audience volunteers. She also showed the range of additional protection available for the legs, head and eyes for staff working in Interventional Radiology, the sites radiation badges should be worn and additional protection available to pregnant staff members.

## Bone functions

The final speaker was **Dr Brya Matthews**, Senior Research fellow in the faculty of Molecular Medicine at the Auckland University. Brya described the functions of bone. She then outlined the respective roles of bone cells — osteoclasts (bone absorption), osteoblasts (bone formation) and osteocytes in bone remodelling.

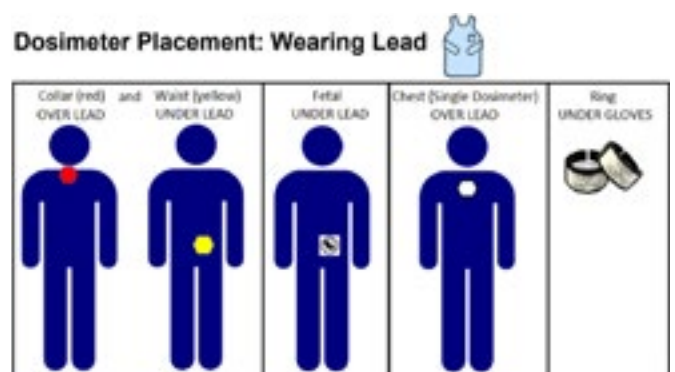
Brya is currently involved in a study looking at the bone periosteum in bone healing. It is known that bone growth, remodelling and healing require tissue-resident skeletal stem and progenitor cells and that the periosteum is a rich source of cells involved in fracture healing.

There is increasing evidence that stem cell populations are different in different skeletal tissues and while there are many studies in mice, human data is more limited. Her team's current project aims to evaluate human skeletal stem and progenitor cell (hSSPC) populations isolated from hip joint replacement surgery, in different tissue compartments and identify populations in the periosteum that show ex vivo stem cell characteristics.

To date they have confirmed stromal populations vary between periosteum, bone marrow and articular cartilage and identified the specific adult human periosteal skeletal stems cells present in the periosteum and cartilage. It is hoped that this research will ultimately result in new treatments to promote fracture healing.

## Epidemiology of fractures

The second part of Brya's presentation looked at the epidemiology of



fractures in New Zealand based on Accident Compensation Commission (ACC) data.

While fractures occur through the lifespan, most epidemiological studies of fracture focus on hip fracture incidence, which varies dramatically between countries and different ethnic groups. There is limited information for rates of other types of fractures.

Analysis of the ACC data shows fracture incidence peaks in adolescence and the elderly with age related trends depending on fracture site.

Ethnicity distribution of fractures is similar to the New Zealand population with people of European descent having higher fracture rates than other ethnicities. Fewer fractures are reported in people from the most deprived regions, which may reflect a reporting issue. Overall fracture numbers are highest in adolescents and young men, but the incidence is highest in elderly women.

Non-European ethnic groups generally have a lower fracture incidence and while the locations where fractures occur change with age, most, especially in the elderly occur at home.

Source: Marshall, Stuart & Harrison, Julia & Flanagan, Brendan. (2012). Telephone referral education, and evidence of retention and transfer after six-months. *BMC medical education*. 12. 38. 10.1186/1472-6920-12-38.

# Developing Clinical Compet

By Bron Taylor R Comp N, MN [First Class Hons], Susan Cashman RN, PG Dip & Geeta Chandra RN, MN

## Introduction

Post Anaesthesia Care Unit (PACU) nurses provide care to patients in the immediate post-operative period (Luckowski, 2019). PACU is a highly complex critical care area, requiring a multidisciplinary approach to the management of patients' post-anaesthesia and post-surgery.

Patients in PACU are at a high risk of deterioration, complications and adverse events. The PACU nurse assumes responsibility for the care and clinical stabilisation of the patient in the immediate post-anaesthesia period, until they are assessed as ready for discharge or transfer. During this time, the nurse acts as the patient's advocate, managing their care and immediately summoning medical assistance as required. Therefore, these nurses must be adequately trained to rapidly assess and meet patient care requirements in the PACU environment (Australian College of PeriAnaesthesia Nurses [ACPAN], 2019). To ensure consistent training is delivered and skills achieved, a competency workbook has been developed.

## PACU nursing

A patient's length of stay in PACU is determined by factors such as the type of anaesthesia and the patient's response to it. Standard PACU discharge criteria are used to determine a patient's readiness to safely leave PACU. A scoring system is used to assess activity, respirations, circulation, consciousness, and oxygen saturations. As a patient's score improves, he or she becomes eligible for discharge from PACU (Luckowski, 2019).

PACU care is typically divided into two phases: Stage 1 as patients recover from anaesthesia and Stage 2 as they prepare for discharge from the unit.

Stage 1 includes physiologically unstable patients and those who potentially could become unstable and consequently are at risk of harm. Stage 2 is secondary or step-down care and observation of stabilised patients who have completed Stage 1. This includes patients awaiting transport home and those who are awaiting an inpatient bed (Perioperative Nurses College [PNC], 2022).

The PNC gives guidance for safe staffing in PACU (PNC, 2022). This guidance confirms the complexity of care, indicating that when a Stage 1 patient is present in the immediate post-operative area, two registered nurses (RNs) must be present, one of whom must be competent in Stage 1 care (PNC, 2022). Moreover, a two-to-one (2:1) nurse-patient ratio should be maintained when patients are critically ill or unstable, when complicated patients require resuscitation, or for those whose condition deteriorates and require emergency intervention (see Table, page 18).

To enable safe and successful recovery for surgical patients, nurses working in PACU need to demonstrate competence in postoperative care. PACU competence entails specific knowledge and working proactively with the patient and team to provide safe, high-quality care (Dahlberg, Sundqvist, Nilsson, & Jaensson, 2022).

**Abstract** Assessment of a nurses' competency to practice independently is essential in a high acuity environment. The following article describes the implementation of clinical competency assessments for staff caring for patients in Post Anaesthesia Care Units at Te Toka Tumai Auckland.

**Key words:** Post anaesthetic care (PACU) nurses, clinical competency, assessment, Plan, Do, Study, Act (PDSA) cycle.

## Competency

Competency is described as a defined area of skilled performance (NCNZ, 2019) and is a major determinant of measuring whether healthcare workers can safely provide quality care (Stobinski, 2008). Competency and its assessment cannot be separated from the specialty area of practice as it is integrally tied to the

clinical environment (Stobinski, 2008).

Competency progression in perioperative nursing is a continuum from beginning nurse to expert, developed through clinical experience. Beginner perioperative nurses are able to perform basic nursing tasks. Competent and proficient perioperative nurses have acquired technical expertise and demonstrate the ability to problem-solve. Expert perioperative nurses demonstrate leadership along with superior technical and non-technical skills, thereby improving the safety of the surgical patient (Park & Chang, 2019).

The Nursing Council of New Zealand (NCNZ) defines four domains of competence which describe the skills and activities of registered nurses (RNs). These domains are professional responsibility, management of nursing care, interpersonal relationships and interprofessional healthcare and quality improvement.

Each domain has a number of competence performance indicators. Evidence of safety to practise as an RN is demonstrated when the nurse meets all the competencies within all four domains (NCNZ, 2007).

To gain competence in the perioperative environment, nurses must learn the basic theoretical and technical aspects of care. An extended period of specialty education and orientation may be required before a nurse can work autonomously, as perioperative nursing practice is not well taught in undergraduate education programmes (Stobinski, 2008). Once an education programme is completed, beginner perioperative nurses require lengthy preceptor-supported learning prior to autonomous practice. Indeed, the time from entry into a training programme until independent, competent perioperative nursing practice may exceed a year (Stobinski, 2008).

## Training Requirements

The Australian College of PeriAnaesthesia Nurses (ACPAN) state that PACU nurses must have completed a training course, programme or education which includes a set of minimum core competencies. This training includes applied knowledge of:

- Anaesthesia techniques, types and pharmacology;
- Anatomy and physiology: airway, respiratory function, cardiovascular function, central nervous system, thermoregulatory system, pain control regulation, nausea and vomiting;
- Planning and prioritising care throughout the perioperative environment;
- Infection control principles related to the perioperative environment;
- Professional and medico-legal requirements in the perioperative environment;



# Competency Assessments for PACU

- Knowledge of standards/protocols used within the perioperative environment;
- Function and processes related to the perioperative environment;
- Environmental management and safety in the perioperative environment;
- Pharmacological administration and management;
- Evidence-based practice and research;
- Patient safety and human factors specifically teamwork, situational awareness, cultural competence and communication (ACPAN, 2019, p. 2).

Further to this, ACPAN specify that PACU nurses must have undertaken a minimum of 12 months or 1900 full-time equivalent clinical hours of PACU experience. They assert that learner nurses with less than 1900 clinical hours must be supervised by a trained, competent, and qualified RN (ACPAN, 2019).

## Competency Assessment

Historically at Te Toka Tumai, experienced PACU nurses had informal assessments with their preceptors along with the PACU nurse educators (NEs), and their readiness to practice independently was based on this feedback, along with agreement from the Charge Nurse (CN).

Nurses new to the PACU environment who completed the Pokakapu Ātea-New to PACU programme also had preceptor guidance and informal assessment, along with regular 1:1 review, guidance and feedback from NEs and CNs. Furthermore, the Te Toka Tumai nurse entry to practice (NETP) programme has peer review processes aligned with the NCNZ nursing competencies for professional development and recognition programme (PDRP) portfolios which nurses were required to complete before they could graduate from the programme. These nurses also completed a post-graduate advanced assessment paper. As such, formal competency assessments had not been required. However, the education team agreed that more formal PACU competency assessments would provide consistency and assurance that an agreed standard of practice had been met. This proved to be especially important as we moved towards a more flexible workforce within the service. As some of our units have employed Anaesthetic Technicians with expanded scope in PACU, use of the competency workbook has been implemented with both professions. This has further helped to gain valuable feedback.

## Writing Competency Assessments

ACPAN defines the minimum core competencies for PACU nurses. These are:

- patient assessment;
- clinical handover;
- pain assessment and management;
- special populations such as obstetric patients;
- emergency care;
- PACU equipment and safety (ACPAN, 2019).

The PACU NEs started writing formal competencies using ACPAN's recommendations and Auckland DHB's guidelines in 2020. Unfortunately, lockdowns and outbreaks of COVID impeded this work as we were required to prioritise cross-skilling of perioperative staff, which took a lot of time. The team planned to have draft competencies written by the end of 2021, so they were able to be approved by PACU CNs and directorate leadership to trial for the January 2022 Pokakapu Ātea-New to PACU intake.

The competencies were aligned with ACPAN requirements and based on the organisational PACU Care and Discharge Policy as well as individual PACU unit requirements. These were:

- Patient Admission to PACU;
- PACU Assessment;
- Safe airway removal;
- Cardiovascular assessment & management;
- Fluid management;
- Wound assessment;
- Pain management;
- Postoperative nausea and vomiting (PONV) management;
- Documentation;
- Patient assessment for discharge;
- Patient handover;
- Unit Specific.

Four core competencies were deemed to be PACU NE only sign off to further ensure a consistent standard of practice. These were safe airway removal, documentation, patient assessment for discharge and patient handover. When completing the unit specific competencies, focus was placed on understanding the core principles of the specialities nursed in those areas. These were completed in collaboration with the associated CN for the area.

## Methodology

A Plan, Do, Study, Act (PDSA) cycle was used to design the competency assessments. The essence of the PDSA cycle is to structure the process of improvement in accordance with the scientific method of experimental learning. It is a framework for continuous learning through testing of changes (Knudsen, et al., 2019)

During the Plan phase of the



project, it was established that a simple tick box tool assessing the skill being demonstrated didn't provide the depth of assessment required of the staff. It was felt that having two components, demonstrated skill and rationale for practice criteria, assessed both the hands-on skill and the rationale and provided the opportunity to ensure the depth of required competence was evident. The demonstrated skill broke the competency down into sub areas of the main competency and gave several skills that the preceptee had to demonstrate and be signed off on. The rationale for practice criteria provided a range of questions which the preceptee had to answer demonstrating the rationale for the practice and illustrating a depth of knowledge. This allowed for a more robust assessment of competency in the PACU environment.

On completion of the Competency Workbook, feedback was sought from a range of staff including, PACU CNs, OR Managers, Nurse Consultants, Associate Nurse Directors, Nurse Director and a small number of staff on the floor.

For the Do phase of the project, the workbook was tested on newly orientated staff and experienced preceptors. From this consultation period, slight tweaks to the workbook were made before trialling it with the New to PACU staff.

For the Study phase, feedback was sought from preceptee and preceptor, both during the orientation period and after completion of the workbook. Based on this feedback a few further amendments will be made to the workbook, including additions to unit specific competencies and expanding on some other core competencies. The plan is to introduce a newly updated workbook before the end of the year which will become standard for all staff who start in PACUs (Act phase).

## Conclusion

The competency workbook has provided a very robust tool to use for all new starters in PACU. It is envisioned that this is only the starting point, especially with the current need to train and build the PACU workforce. Therefore, the introduction of these competencies will enable guidance on standards of practice that need to be taught and maintained. Furthermore, it will identify areas requiring improvement.

Overall, the competency assessment is another tool in the toolkit to train staff rapidly and effectively. The team looks forward to further introduction and implementation of competency workbooks in the surveillance of certain essential PACU nursing skills in both the adult and paediatric population groups to ensure on-going safe and quality care.

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## Staffing for PACU Stage 1 (PNC, 2022 p. 5)

### 1:1 nurse -patient ratio should be maintained for:

- At the time of admission, until the critical elements are met i.e. report has been received from the anaesthesia care provider, questions answered, and the transfer of care has taken place, patient has a secure airway, initial assessment is complete and patient is haemodynamically stable.
- Unconscious patients
- Patients requiring airway management
- Intubated patients, including ventilated and non-ventilated (unless the PACU nurse has experience with patients intubated with an endotracheal tube an anaesthetist must also stay with the patient).
- Infusions requiring constant monitoring of vital signs e.g. inotropes
- Following major procedures until stable.
- Patients following a severe complication e.g. major blood loss, respiratory/ cardiac arrest
- Unconscious patient under 8 years
- Patients requiring constant attention to maintain safety e.g. frequent tracheal suctioning, confused/agitated patient.

Note: a second nurse must be available to assist if necessary

### In the stabilisation phase a 1:2 nurse-patient ratio is acceptable, taking into consideration:

- Both patients are conscious and stable.
- One unconscious, stable, without artificial airway, and over the age of 8 years;
- and one conscious, stable, and free of complications, over 8 years of age.
- Two conscious, stable, 8 years of age and under, with family or competent
- A support staff member is present.

explored OR nurse staffing in an Aotearoa / NZ context. Bron is the current Chief Editor of The Dissector.

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# Assessment & management of diverticulitis

By Devon Caffell

## Introduction

Diverticular disease is a chronic health issue impacting many people worldwide. Diverticulitis can range from mild, requiring minimal management, to severe, involving significant management and possible bowel resection. The main issues for assessment and management of diverticulitis are discussed below with the best practice for assessment and management of diverticulitis identified.

## Evidence-based practice – patient management

Evidence-based practice (EBP) is the direct application of research into practice (Wall, 2008). Current scientific research is reviewed and critiqued before implementation into practice to provide patients with the best, most current care possible (Welfare-Wilson & Scrivener, 2015).

EBP is relevant to patient management as nurses are constantly developing their practice. This helps to keep patients safe, as practice is current and based on multiple sources of information.

The search strategy used to find relevant articles involved a systematic search to narrow the parameters. Words used in the search bars included 'diverticulitis', 'assessment', 'management', and 'practice'. To ensure that the articles collected are current and relevant, a five-year time bracket was specified with only peer-reviewed material selected. This search method resulted in many credible articles, all of which were reviewed along with their references, to ensure credibility and relevance.

## Diverticulitis

Diverticular disease is a chronic health issue that impacts many people worldwide. It is characterised by the presence of diverticula or small pouches that extend out from the bowel (Tsetse, Chaudhry, Jabi, Taylor, 2019). Diverticula are most commonly found in the left colon but can also be found in the right colon and the small bowel (Sugi, Sun, Menias, Prabhu, & Choi, 2020).

The term diverticulitis refers to inflammation of diverticula and can be mild or become severe and cause further issues such as a fistula or perforation into the abdominal cavity (Tsetse et al., 2019). The disease can be conservatively managed in most people, but some require elective and acute surgical intervention (Lee, Gachabayou, Kajmolli & Bergamaschi, 2019).

When surgical intervention is required, the goal is to treat the patient acutely before elective surgery at a later time (Benlice, Delaney, Liska, Hrabe, Steele and Gorgun, 2018).

## Ultrasound vs CT scan

There is significant discussion surrounding best practice when assessing

**Abstract** This article reviews the current literature surrounding diverticular disease and the assessment and management of a presenting patient. Evidence-based articles were utilised to review diagnosis using either computerised tomography (CT) scan or ultrasound and conservative treatment versus surgical treatment.

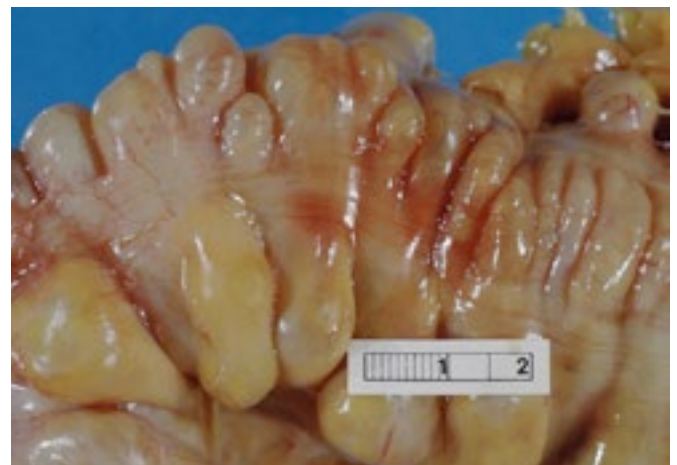
**Keywords:** Diverticulitis, assessment and management, ileostomy, colostomy, lavage

a patient with diverticulitis using imaging. Chiu, Chou, Tiu, Chiou, Wang, Lai and Chiou (2017) state that, used together, ultrasound and computerised tomography (CT) accurately assess the patient. They found that a CT scan is specifically accurate in the diagnosis of acute diverticulitis as it has a "high

sensitivity and specificity" for capturing the disease (Chiu et al., 2017, p. 34). Tsetse et al., (2019) found in their case study that a CT scan provided accurate results and a clear image. The cause of the patient's symptoms was identified immediately with minimal confusion or uncertainty (Tsetse et al., 2019). They argue that a CT scan is best practice to identify the issue with no time delay, although a CT scan exposes the patient to a high dose of radiation. As Tsetse et al. (2019) are radiologists, they have a specialised knowledge of medical imaging and have no bias identified.

Macia-Suarez (2019) details specific guidelines used by Santiago Clinic Hospital CHUS in Spain to encourage a reduction in the amount of radiation to which a patient is exposed. Santiago Clinic Hospital uses ultrasound for diagnostic imaging and found no evidence to suggest that ultrasound is not valuable as a first line diagnostic tool (Macia-Suarez, 2019). Despite this, they found the literature showed differing results and there was no one option that was significantly preferred to the other.

In their research, Horesh, Wasserberg, Zbar, Gravetev, Berger, Gutman, Rosin and Zmora (2016) found that clinicians base their diagnosis of acute diverticulitis on imaging rather than on physical assessment. The



Section of the large bowel (sigmoid colon) showing multiple pouches (diverticula). These appear on either side of the longitudinal muscle bundle (taenium) which runs horizontally across the specimen in an arc.





Diverticula are identified on CT scans as outpouchings of the colonic wall. These outpouchings may contain air, barium, or fecal material. The diagnosis of diverticulitis with CT scanning is based on the detection of colonic and paracolic inflammation in the presence of underlying diverticula.



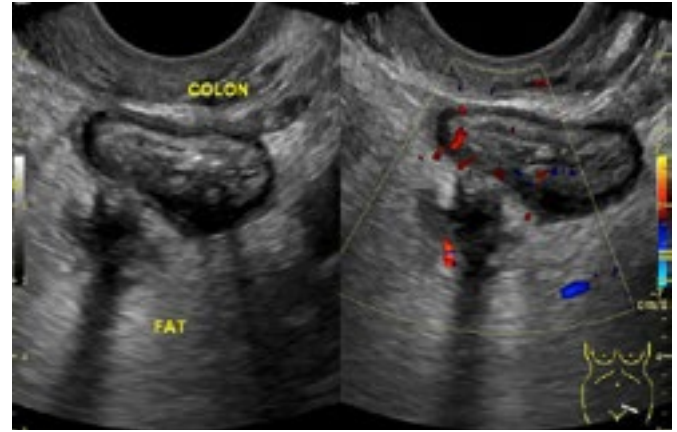
Multiple large diverticuli extending from the first part of the duodenum to the proximal ileum seen during exploratory laparotomy.

authors state that the most common symptom of diverticulitis is left lower abdominal pain, but this can be misleading and lead to misdiagnosis in a large number of patients (Horesh et al., 2016).

Horesh et al. (2016) also took into account that in many Asian countries, diverticulitis is more common on the right side, so patients will be experiencing right-sided pain. Cristaudo, Pillay and Naidu (2015), state that when a patient of Asian ethnicity presents with right-sided pain and changes in bowel movements, right-sided diverticulitis should always be considered.

An issue that many articles found in the assessment of diverticulitis is the interpretation of medical imaging, with one factor being high BMI (Spacil, Meyer, Stehr & Schafer, 2019). Spacial et al. (2019) found that when they tried to perform an ultrasound on a patient they described as obese, it provided them with limited results. Due to the lack of results from this imaging, the patient was exposed to radiation during a CT scan (Spacil et al., 2019). This is a significant issue as obesity and high BMI are affecting an increasing number of the population (Spacil et al., 2019).

Another factor that can affect the interpretation of imaging is human error (Brackett, Khullar – Gupta, 2019). Brackett and Khullar – Gupta (2019) have found in their experience that the phenomenon often referred to as the “satisfaction of search” can occur. This is when someone reviewing a patient’s imaging will find an abnormality, report on that one issue and any other abnormalities will go unnoticed (Brackett, Khullar – Gupta,



Ultrasound showing the presence of a protrusion from sigmoid colon at the site of pain. Its neck is seen. There is posterior acoustic shadowing due to presence of air. It is a diverticulum. Diverticular wall shows thickening along with adjacent colonic non-circumferential wall thickening. Peri-diverticular fat is echogenic and non-compressible. There is local hypervascularity. There is no collection in peri-diverticular fat. (Image courtesy Radiopaedia).

2019, p. 165). When imaging of the right lower quadrant is examined and inflammation is present, it is often mis-reported as appendicitis, when it could be right-sided diverticulitis (Brackett, Khullar – Gupta, 2019).

Spacil et al. (2019) also found this to be an issue in their article. The patient in their case study was sent to operating theatre with suspected acute appendicitis, the appendix was not visible on the ultrasound scan but appendicitis was assumed (Spacil et al., 2019). This patient had perforated diverticulitis, which affirms that interpretation of imaging is an issue related to assessment of diverticulitis.

## Patient considerations

The World Health Organisation (WHO), define obesity as “abnormal or excessive fat accumulation that presents a risk to health” (World Health Organisation, 2022, Para. 1). Obesity is an issue in the management of diverticulitis (Weber, Chung, Gamma, Procaccino, Alfonso, Coppa, & Sugiyama, 2020). Obesity is linked to poor postoperative outcomes following surgery for diverticulitis. Complications include anaesthetic difficulty, extended operative time, wound infection and blood clots (Weber et al., 2020). Prior to their operation, an obese patient will have to undergo more assessments and an anaesthetic review, meaning that surgical management is delayed (Weber et al., 2020).

Diverticulitis becomes more common with age; this presents a potential issue with patient assessment and management (Juszczuk, Ireland, Thomas, Kroon & Hollington, 2020). For example, elderly people with diverticulitis may present with confusion/delirium, a symptom not seen in younger people (Ellison, 2018). This can make it hard to assess the patient and diagnose the problem.

Elderly patients generally have more comorbidities than young patients and have a higher risk of developing complications (Ellison, 2018). This becomes an issue when managing uncomplicated acute diverticulitis in the community. Many facilities prefer to treat uncomplicated acute diverticulitis as an outpatient after imaging and bloods are taken and appropriate antibiotics are prescribed (Juszczuk et al. 2020). This becomes an issue in the elderly as progression of diverticulitis, or complications related to their comorbidities are more common although some clinicians believe that it is still safe to do so (Maera & Alexander, 2018).

## Conservative management

There are many ways to manage both uncomplicated and complicated acute diverticulitis. International guidelines have recommended the use of both intravenous and oral antibiotics in the treatment of uncomplicated acute diverticulitis (UAD) (McSweeney & Srinath, 2017). UAD is when there

is inflammation present but there is no perforation, abscess or surgical intervention needed (McSweeney & Srinath, 2017).

Conservative management has been considered best practice by many, and surgical intervention should be reserved for unstable patients (Courtot, Bridoux, Lakkis, Piessen, Manceau, Mulliri, Meurette, Bouayed, Venara, Blanc, Tabchouri, Salame, & Ouaisi, 2019). Some clinicians even prescribe an extra course of antibiotics in preparation for the next flare up (Slim, Joris, & Beyer-Berjot, 2019).

Many clinicians are starting to question if antibiotics are the best option for the patient. Results of a number of trials show an insignificant difference between treatment with antibiotics and without (McSweeney & Srinath, 2017). This is very significant as the rise of antibiotic resistance has resulted in many clinicians looking for ways to safely reduce antibiotic use (McSweeney & Srinath, 2017). Slim et al. (2019) note that countries such as the USA and some European countries have changed their guidelines to discourage the use of antibiotics in the treatment of UAD. As the use of antibiotics was only questioned recently (2015), the research is still new and long term risks and benefits have not been accurately recorded, with further studies required for conclusive results (McSweeney & Srinath, 2017; Slim et al., 2019).

### Surgical and postoperative management

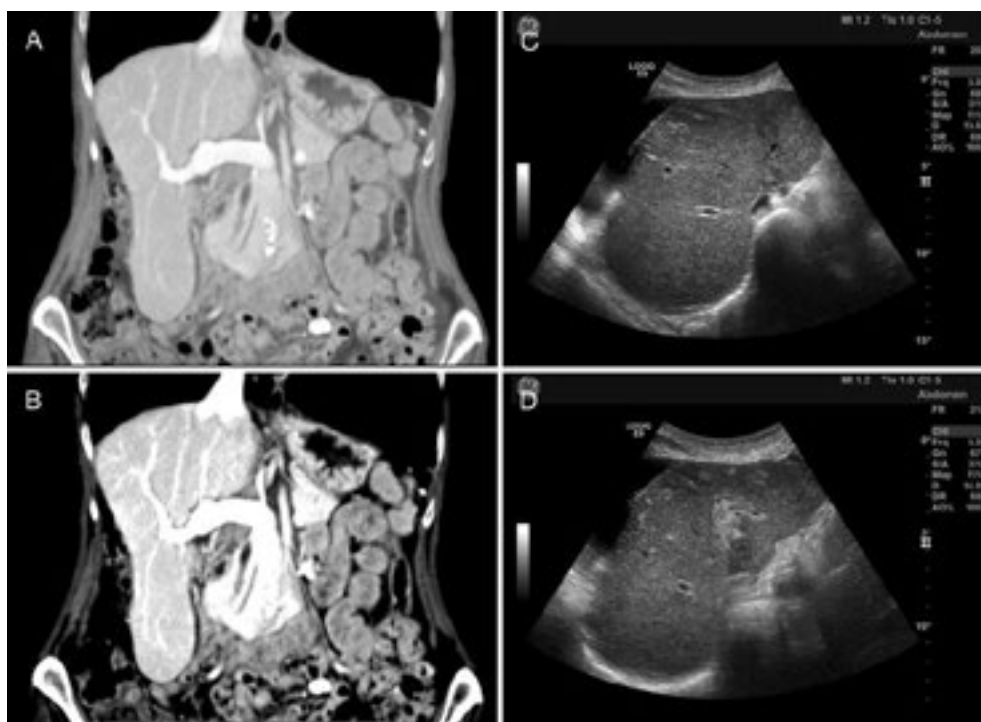
If a patient's acute diverticulitis cannot be treated conservatively, resection of the affected bowel will be performed. This usually involves a diagnostic laparotomy and resection of the affected bowel (Siddharthan, Gardner & Lu, 2019). Laparoscopic resection can also be performed though laparotomy is preferred (Ahmed, Moahammed, Mattar, Mohamed, Faraag, AlSafadi, Hirayama & Huy, 2018). The resection may result in an anastomosis of the bowel or the formation of an ileostomy or colostomy (Siddharthan et al., 2019).

Once the bowel has been removed, it is best practice to do a washout of the peritoneal cavity to ensure that any fluid has been removed before closing the patient's abdomen (Siddharthan et al., 2019).

Siddharthan et al., (2019) provide a detailed algorithm for the management of diverticulitis which states that resection is appropriate when there is peritonitis or pneumoperitoneum. This aligns with the conclusions of their study. There are an adequate number of credible references used in this article.

Wright, Flermoen, Robinett, Charney and Chung, (2016), also recommend that in the presence of complicated diverticulitis, resection is the preferred method of management. Their results found that this is the best practice for positive patient outcomes. Resection with a primary anastomosis and the formation of a diverting ileostomy is best practice over the formation of a colostomy. This was also reflected in Cyrran and Kwaan's (2020) article. Wright et al., (2016) found that morbidity is avoided when an ileostomy is formed and reversed later.

Wright et al., (2016) conducted their study over a seven-year period



CT scans (A—abdominal view, and B—liver view) reveal a prominent Riedel lobe of the liver, with no evidence of obstruction, thrombosis, or malignancy. Mild changes of sigmoid diverticulosis are seen, with no evidence of acute diverticulitis. Ultrasound (C, D) reveal a heterogeneous echotexture of the liver with regions of increased echogenicity in the right lobe, a non-specific finding which may be seen in hepatitis. (Image courtesy Research Gate).

with 115 participants; these participants had acute surgery for the management of diverticulitis. A review on the outcomes of these patients was conducted, looking at multiple factors including morbidity, length of stay, complications and mortality. A significant amount of data was collected from this group and compared all patient factors in depth. One weakness of this study is that it was only carried out in one facility which shows the trends for one area and does not represent a whole population.

A common postoperative issue in the management of diverticulitis is anastomotic leak (Rosen, Hwang, Ault, Ortega, & Cologne, 2017). The formation of an ileostomy at the time of initial surgery to protect the anastomosis is common practice. This may be reversed over time or may become permanent depending on the individual (Rosen et al., 2017). An anastomotic leak will cause the patient to become unwell and increase their length of hospital stay (Rosen et al., 2017).

When forming an ileostomy, the surgeon will have to consider other factors of surgical management that will impact on the patient (Benlice,

*The term diverticulitis refers to inflammation of diverticula and can be mild or become severe and cause further issues such as a fistula or perforation into the abdominal cavity...*

Delaney, Liska, Hrabe, Steele, & Gorgun, 2018). These factors include considering whether the patient will be able to manage an ileostomy by themselves and how this will impact on their mental health (Benlice et al., 2018).

Although the formation of an ileostomy will protect the anastomosis and help to reduce the risk of an anastomotic leak, this is not always what is best for an individual patient (Rosen et al., 2017).

Another form of management for acute diverticulitis is lavage. This involves cases that require surgical intervention due to a perforation or abscess (Guimaraes & Barbosa, 2020).

Laparoscopic peritoneal lavage can be the main surgery or a temporary solution to contain inflammation. Lavage can ensure that a patient remains stable enough to wait for an elective resection with primary anastomosis (Guimaraes & Barbosa, 2020). This could mean that patients are less likely to experience the high morbidity associated with emergency surgery and the possible formation of a stoma (Guimaraes & Barbosa, 2020).

Although their study leans towards lavage being a positive, minimally invasive procedure, Guimaraes and Barbosa (2020) state that more studies are needed to establish whether this is best practice for the patient. They also acknowledge that while lavage is beneficial for the patient, it is not superior to resection (Guimaraes & Barbosa, 2020). This source is credible because they state the limitations of their study and the need for more research to be conducted to provide definitive results. The authors also provided a detailed analysis of their article selection process.

Pan, Pan, Pan, Xie and Desai (2019) through their systematic literature review concluded that lavage is not superior to a bowel resection in the case of acute diverticular perforation. While there was a shorter operative time and hospital stay associated with lavage compared to resection, the

mortality rate was similar in both procedures, so best practice for the patient remained unclear (Pan et al., 2019). They state that the evidence suggests lavage alone is inadequate in the control of sepsis and may lead to the patient requiring more surgical procedures in the future (Pan et al., 2019).

## Local Management of Diverticulitis

In my workplace, surgery on people with acute diverticulitis is common. They usually have a bowel resection of the affected area with anastomosis, have their abdomen washed out and have a diverting ileostomy formed. This aligns with best practice as outlined in the research. Lavage is rarely used, although this may become more common as the research is still developing world-wide. Most of our patients come to operating theatre after having a CT scan, aligning with the research above.

## Conclusion

In conclusion, an issue that affects the assessment and diagnosis of diverticulitis is accurate imaging. A CT scan will provide better imaging but also expose the patient to more radiation. Diverticulitis becomes more common with age; management of the elderly can present many issues mostly related to their comorbidities. Conservative management is best practice for uncomplicated diverticulitis but resection is still considered superior management for complicated or unwell patients.

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# The vital role of preceptors in the operating room

By Sophia Simupande

## Introduction

Preceptorship is seen as a positive and necessary process for both the preceptor and preceptee. However, for it to have any meaningful benefit, it must be delivered effectively. With the move to degree training, the role of preceptors has become crucial in the transition of new graduate nurses into the perioperative environment. For some of these nurses, it is the very first time they enter the operating room (OR), as most training programmes do not have student placements. Consequently, the preceptor's role is not only that of teaching and skill acquisition to achieve positive patient outcomes — it also ensures the integration of inexperienced staff into an environment far removed from the ward and community nursing world.

This article will provide awareness of the many challenges preceptors face with individual learners and help preceptors in their professional development. It is based on clinical practicum project for a Master's degree, exploring the challenges nurses face when integrating and teaching nurses new to the perioperative environment. The project sought to explore the notion that experienced nurses are able to teach effectively even when they have had no teaching experience. It is hoped that this will provide an insight in achieving integration into the perioperative environment.

## OR Nursing Skills

The complexity of the OR means that adverse events are a major factor in patient care. Adverse events refer to the unintended injuries that happen to patients while under hospital care. Approximately half of all hospital adverse events relate to a procedure in the OR (Einav et al., 2010).

**Abstract** The vital role of the preceptor in supporting the transition of new graduate nurses to the perioperative environment is well recognised. The preceptor role is challenging in this complex environment, requiring knowledge of self, teaching methods and learning styles. This article, based on a master's practicum project, outlines the role of the preceptor and the critical areas that they need to focus on to enhance practice in the perioperative environment.

**Key words:** Operating rooms, preceptor, teaching and learning, socialisation, technical and non-technical skills

Patient care in OR is not only based on diagnosis and treatment but also on ensuring optimum patient safety by enhancing team collaboration and preparation. To achieve this care, perioperative nurses encompass two cardinal skills — technical and non-technical. Perioperative nurses are often seen as 'instrument nurses' which are referred to as technical skills. While non-technical skills are significant contributors that

influence patient safety, they also ensure monitoring of performance. OR nurse non-technical skills include teamwork, interpersonal communication and situation awareness (Kang, Gillespie, & Massey, 2014; Mitchell et al., 2012).

Preceptors are entrusted with the responsibility of socialising novice nurses to this environment; they must realise the significance of this task. Not only must they socialise the new nurses to the environment, they also play a major role in the acquisition of required skills. It is important to appreciate that the preceptorship role takes time to develop and requires knowledge of adult learning principles with continuous education and professional support. The preceptor must be aware of the supportive structures they require for their learning needs, including their clinical educators and charge nurses (Kang, Gillespie & Massey, 2014).

## Understanding the adult learner

Before beginning any teaching, the preceptor needs to understand the principles that govern their practice. The advantage of starting with these principles is that it allows comparison with what literature deems to be effective evidence-based practice.

Understanding that adults perceive and learn differently is key to



Sophia (back row, second from right) and the team at GSU Te Toka Tumai Auckland. (Photo: Photography Department at Te Whatu Ora, Te Toka Tumai Auckland).

successful preceptorship and learning by experience or experiential learning, allows transformation. Adopting adult learning principles will require both the preceptor and the preceptee to change their perception of their roles (Galbraith, 2004; Taylor & Hamdy, 2013).

Preceptors must have a strong knowledge of self. That means they need to be aware of their own beliefs and attitudes and how they influence the teaching and learning process. A teaching style is a medium of expression concerned with the process rather than the product. It refers to specific qualities a teacher displays in varying situations. Preceptors should be able to establish what is significant in a teaching and learning episode and reflect on what made that moment meaningful (Asselin, Schwartz-Barcott, & Osterman, 2013; Knowles, Swanson & Holton, 2005).

### Teaching methods

Preceptors require familiarity with the teaching approaches that can be used in different situations to maximise learning opportunities. These approaches provide tools for clinical teaching to ensure maximum efficiency and enable preceptors to plan meaningful experience for both teachers and learners.

Understanding diversity in learning approaches is essential in adult learning, as adults perceive and process information differently. Learners may also have a preference for how they learn, so preceptors should use diverse learning principles to accommodate as many teaching methods as possible.

In the learner-centred approach, emphasis comes from the constructivist principles of skills acquisition which builds on the learner's knowledge. Reflection is a crucial component where the learner reflects on their experience while the educator provides 'scaffolding' or support. (Cook, 2016; Galbraith, 2004).

### Time pressures

Learning in the high-pressured OR environment is continual. Preceptors must devise a way of teaching within time constraints, where every minute has a financial pressure. Effective preceptorship allows time for the preceptee to assimilate and integrate their learning and create opportunities for practice and reflection, ensuring new skill acquisition. However, time pressures and the extreme complexity of some procedures often result in a lost opportunity for learners to integrate and consolidate their skills. Preceptors need to support and create learning opportunities which can at times require advocacy and speaking up to ensure the learner is supported (Asselin, Schwartz-Barcott, & Osterman, 2013; Clark & Holmes, 2007).

The five-minute preceptor (FMP) is a micro skill model of clinical teaching. It is designed to provide one on one clinical education and is particularly useful in time-constrained environments. This model derives from the medical faculty, who identified a clinical behaviour known as 'micro-skills'. It provides step-by-step guidance in a time-efficient manner. Its purpose is to increase the frequency of teaching moments as well as enhance the quality of teaching when there is time constraint (Bott, Mohide & Lawlor., 2011, Cook, 2011).

### Socialisation and multidisciplinary team effectiveness

There is an initial reality shock for those beginning work in OR. The environment and roles differ widely from other areas. As such, the role of preceptor becomes crucial as newcomers facilitate the transition. This transition does not happen by accident; it requires careful planning by the preceptor and if not managed carefully, may lead to stress and burnout. The preceptor needs to understand that expectation of cultural adjustments is not solely the responsibility of the new nurse, but their responsibility as well. They need to know that it is not just

about knowledge and skill acquisition. It is also about the process of social integration into the interdisciplinary team, which is the professional community.

In essence, OR nursing relies heavily on effective teamwork and socialisation, which in turn plays a vital role in the successful transitioning and retention of new theatre nurses into professional practice. Preceptors provide a personal connection in an impersonal and seemingly hostile environment. One way of achieving this is by sharing experiences and personal stories, allowing the learner and the teacher insight that creates a relationship based on mutual trust and an openness to flourish. They use stories to make sense of experiences by enabling emotional connections, as they impact in a personal way, consequently achieving reflective transferable learning (Chaunda & Jeanetta, 2016; Taylor & Hamdy, 2013; Hunt, 2007; Sorrentino, 2013).

Utilising the shared values of the organisation becomes central in any clinical education and patient care. These values govern behaviour towards each other as colleagues in the preceptor/preceptee relationship, allowing an exchange of knowledge and connectedness, increasing sensitivity and perception. Values offer direction in all teaching in the clinical arena and should inform all practice (2016; Taylor & Hamdy, 2013).

### Creating an inclusive workplace

Inclusion is the extent to which inexperienced staff can participate and be treated as part of the team within the workplace. Inclusion requires skills such as empathy, active listening, appropriate communication, and self-awareness. Humans are not born with the ability to communicate effectively or embrace diversity but are taught these attributes. An inclusive environment influences the nurses' self-esteem resulting in them going above and beyond the requirements of the job. Being a supportive preceptor is no longer enough; the preceptor must also be an advocate by standing up to colleagues' behaviour when they criticise the inexperienced staff. Advocacy emphasises actively seeking out members of diverse groups not only for equity and fairness but because they are uncommon. It means respecting their talents, contributions and celebrating their uniqueness. The organisational culture should be about changing the mindset of the workforce to valuing and appreciating everyone's uniqueness (Vohra et al., 2015).

In a confined working environment such as OR that is characterised by individual values, goals, responsibilities and perspectives, conflicts are inevitable. Conflict is defined as 'the interaction of interdependent

*Effective preceptorship allows time for the preceptee to assimilate and integrate their learning and create opportunities for practice and reflection, ensuring new skill acquisition*

people who perceive the opposition of goals, aims or values and who see the other party as potentially interfering with the realisation of these goals' (Kim, Nicotera, & McNulty, 2015 p. 2074). Conflicts can emerge as damaging and disruptive behaviour, which, if not managed effectively, can impact the individuals' concerned as well as patient care. Constructive conflict is where the preceptor strives to reach an agreeable resolution. Individuals will collaborate and gain an understanding, recognising the need to come to a suitable position that acknowledges the importance of interdependence. Successful management of conflict largely depends on the ability to use it as an opportunity for productive growth and a chance to address the arising issues.

### Technical and non-technical skills

The complexity of nursing in acute care means it is not enough to give standardised routine delegated care; achieving a high-level of performance means it is essential for an OR nurse to acquire both technical and non-technical skills.

Technical skills such as scrubbing up, gowning, and initiating swab counts, are essential for effective scrub practice. These are low cognitive actions that are learned and embedded through repetition until they become second nature. After obtaining these technical skills, the preceptee accomplishes the activities effortlessly and they become subconscious actions. Technical skills are essential. As technical skills are observable, they form a basis for determining competence in the OR; however, one should use them in conjunction with non-technical skills (Halliwell, 2012).

Non-technical skills describe social and cognitive skills that augment technical skills and minimise the risk to surgical patients while optimising patient care. There is a strong correlation between non-technical skills and the number of technical errors that occur; therefore, non-technical skills are essential to a high performing team. These non-technical skills are cognitive, social and personal skills culminating in situational awareness (Mitchell et al., 2012).

Situation awareness (SA) is defined as developing and maintaining a dynamic understanding of the situation in the OR using information gathered from the environment. Understanding this information and anticipating what might happen next forms the basis of non-technical skills. SA is the active observation and development of awareness of the ever-changing situation and processing this information to anticipate the next step. It is a skill that the experienced nurse will have, but the novice will have to develop critical thinking, clinical reasoning and clinical judgment before they too can grasp this concept.

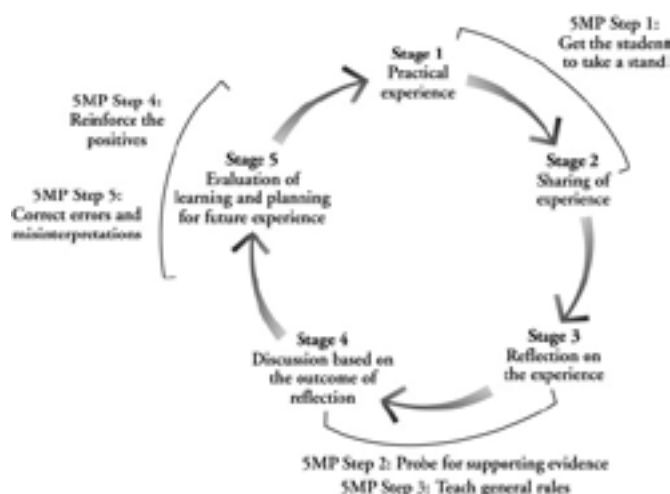


Figure 1: Application of the five-minute preceptor (5MP) steps incorporating Kolb's experiential learning cycle (Bott, G., Mohide, E. A., & Lawlor, Y., 2011, p39)



The process of learning is not merely about attaining knowledge. It is about being able to decipher knowledge, enabling it to be used meaningfully and focusing on commonplace behaviours that help the learner understand that the tiny changes in communication and collaboration contribute to patient safety (Taylor & Hamdy, 2013). In SA, listening and observational skills are heightened, providing anticipation. Making assumptions is unacceptable but rather rechecking and ensuring that things are as they should be. Rather than looking for evidence to confirm the assumption, the subtle changes that may result in adverse events are acted on.

Preceptors must acknowledge the difficulty in teaching situation awareness. Non-technical skills for scrub practitioners (SPLINTS), produced by the University of Aberdeen in the United Kingdom, is a resource for teaching and assessing difficult to teach non-technical skills in scrub nurses at all levels of experience. It provides three key areas: situation awareness, communication & effective teamwork and task management, which are essential skills in OR.

SPLINTS is a useful tool to demonstrate how non-technical skills enhance technical skills as it looks at the scrub nurse's role expectations, providing a framework that gives structure to strengthen clinical knowledge skills (Flin, 2014; Hull & Sevdalis, 2015; Kang et al., 2014; Mitchell et al., 2012).

## Assessment

Assessments are carried out to determine that learning has taken place and to what degree the learner has achieved education. It is crucial to establish that the evaluation is a true reflection of the knowledge attained in the practice arena rather than it being a box-ticking exercise. Many kinds of assessments are used. One form is active questioning: the right questions can ensure an exchange of ideas. It also enables critical thinking, development of sound decision making and facilitates knowledge retention.

Formative assessment is used in the clinical practice setting. Formative assessment derives from observations in the interactive

## Approximately half of all hospital adverse events relate to a procedure in the OR

sessions with the preceptors. This allows instant feedback on what they are learning and what they will take away from the exercise (Ulfvarson & Oxelmark, 2012). Feedback is essential as it gives preceptors an indication as to whether they have met learning needs. It also identifies gaps and allows for adjustments to be made.

## Conclusion

By equipping preceptors with knowledge and skills on adult teaching methods, socialisation, and assessment they will change and improve aspects of their clinical teaching, thus enabling the successful transition of preceptee into professional practice. As perioperative nurses, we need to be proactive in creating research for our use, as we are the experts in the OR environment (Se Ok, 2016). Our patients will ultimately benefit as their care will be enhanced.

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# Gamification to Teach Nurses Critical Thinking

By Ara Cho

## Introduction

Game-based learning, known as gamification, is a concept where learning content is converted into games (Strickland & Kaylor, 2016). The concept involves applying game mechanisms such as parameters, progression, goals, voluntary participation, feedback, and rewards to non-game environments (Brull & Finlayson, 2016, p. 372).

Games range from simple puzzles to serious games such as simulations or escape rooms (McEnroe-Pettite & Farris, 2020; Pront et al., 2018).

Literature on game-based learning and critical thinking in nursing education has shown various types of games and subjects (García-Viola et al., 2019; Granger et al., 2018; Havola et al., 2021; Ignacio & Hui-Chen, 2020; Koivisto et al., 2016; McEnroe-Pettite & Farris, 2020; Reed, 2020; Tyo & McCurry, 2021; Zehler & Musallam, 2021).

Games range from simple puzzles to complex virtual reality games (García-Viola et al., 2019; Granger et al., 2018; Havola et al., 2021; Ignacio & Hui-Chen, 2020; Koivisto et al., 2016; McEnroe-Pettite & Farris, 2020; Reed, 2020; Tyo & McCurry, 2021; Zehler & Musallam, 2021).

A limitation of traditional lectures is a lack of interaction (Brull & Finlayson, 2016), with adult learners preferring active participation and engagement (Knowles, 1980). These intrinsic factors affect learning experiences (Brull & Finlayson, 2016). Interactive teaching methods, such as game-based learning, are associated with better engagement and motivation, promoting critical thinking (Brull & Finlayson, 2016; McEnroe-Pettite & Farris, 2020).

The main advantage of gamification is that it engages learners through interaction (Brull & Finlayson, 2016). Traditional teaching methods, such as lectures with minimal learner participation, are not as effective (Brull & Finlayson, 2016; García-Viola et al., 2019; Ignacio & Hui-Chen, 2020).

The current generation of nursing students and new graduate nurses mostly prefer interaction, instant feedback and regularly use technology (Brull & Finlayson, 2016; Honey, 2018; Sweet & Swayze, 2017).

Less-experienced nurses need to be prepared to think critically and problem-solve through complex clinical situations (Burrell, 2014; Sweet & Swayze, 2017; Walker & Clendon, 2013).

The anticipated retirement of the Baby Boomer generation (1946-1964) will lead to an impactful reduction in the staffing and experience level of the nursing workforce (Sweet & Swayze, 2017; Walker & Clendon, 2013). Particularly for Operating Rooms (OR), the absence of OR nursing in the undergraduate curriculum challenges employers to upskill nurses

**Abstract** Gamification is believed to promote critical thinking and has become a recent trend in nursing education (Brull & Finlayson, 2016). The following article is based on review of the literature on game-based learning.

**Keywords:** gamification, perioperative nursing education, critical thinking, reflection, escape rooms.

(Chappy et al., 2016). To support nurses in their orientation, nurse educators must apply effective training methods (Brull & Finlayson, 2016; Walker & Clendon, 2013). Furthermore, the pressures of staff shortages and technological advancements impose difficulties for nurse educators to deliver content in shorter timeframes (Fero et al., 2009; Walker & Clendon, 2013).

## Critical Thinking

Critical thinking is described as a process where reflection and evaluation lead to new knowledge or a judgement (Facione, 2011). Critical thinking is understood as a self-regulatory process that evaluates evidence and leads to an inference (Facione, 2011; Simpson & Courtney, 2008). It is associated with problem-solving, prioritisation, and clinical decision-making skills to identify a problem, evaluate and seek a solution (Simpson & Courtney, 2008). These skills enable nurses to solve complex problems and encourage lifelong learning to address future workforce challenges (Simpson & Courtney, 2008). Another associated skill necessary to facilitate critical thinking is creative thinking, which promotes a broader perspective. Failure allows exploring other solutions (Simpson & Courtney, 2008). Critical thinking is associated with better patient outcomes as nurses appraise and provide the best evidence-based practice (Fero et al., 2009).

## Review of the Literature on Gamification

An integrative review of the literature on gamification was completed utilising Whittemore and Knafl's (2005) framework. Twelve studies were systematically selected to be included for review. After analysis of these studies, three themes were identified: reflection, practice, and intrinsic factors.

## Reflection

Reflection was the most common theme related to gamification and critical thinking. Feedback mechanisms within games facilitated reflection (Brull & Finlayson, 2016). Immediate feedback was the most reported mechanism and benefit of gamification and is suggested to challenge and critique the learners' current knowledge (Adams et al., 2018; Brull & Finlayson, 2016; Granger et al., 2018; Ignacio & Hui-Chen, 2020; Koivisto et al., 2016; Mackavey & Cron, 2019).

Learners were required to reflect on feedback and apply critical thinking to complete the game by finding the correct answer (Brull & Finlayson, 2016; Havola et al., 2021). For example, Koivisto et al. (2016) used a computer-based simulation game to teach clinical reasoning

and incorporated automated feedback on correct and incorrect answers. Granger et al. (2018) also provided automated feedback in their computer-based game to teach critical appraisal skills in advanced nursing.

Zehler and Musallam's (2021) study involved playing a time-challenged game with a group of nursing students to learn clinical judgment. A postsurvey demonstrated that the students agreed that the game effectively provided feedback and an opportunity for reflection (Zehler & Musallam, 2021). These findings support using gamification for reflection to facilitate critical thinking.

### Practice

Games allow the practice of skills, including skills associated with critical thinking. As the theoretical foundation of game-based learning, Kolb's (1984) experiential learning theory involves a cycle of learning gained through experience and reflection (Adams et al., 2018; Koivisto et al., 2016; Strickland & Kaylor, 2016; Zehler & Musallam, 2021).

Practice within games promotes learning from experiences, aligning with Kolb's (1984) experiential learning theory (Adams et al., 2018; Koivisto et al., 2016; Zehler & Musallam, 2021). Games provide a safe place to experiment with knowledge and ideas (Koivisto et al., 2016; Kubin, 2020).

Havola et al.'s (2021) study provided nursing students with multiple practice opportunities. The authors implemented a computer-based simulation game followed by a virtual reality game (Havola et al.). Both games were available for the students to play scenarios multiple times and practise clinical reasoning. No significant difference was found between the computerised and virtual reality games (Havola et al.). Havola et al. found that playing more than one type of game amplified the learning.

Contrastingly, two other studies produced statistically insignificant results. García-Viola et al.'s (2019) learners practised decision-making by playing a web-based word-guessing game. They found mixed results between the word-guessing game and the traditional lesson. For example, the experimental group performed significantly better at exploring alternatives. However, the traditional lesson group performed significantly better in making decisions on solutions (García-Viola et al., 2019). Ignacio and Hui-Chen (2020) found no significant difference in knowledge test scores between the experimental and control groups. They further assessed critical thinking through a simulation and observational assessment by trained facilitators with no significant difference between the two groups.

### Intrinsic factors

Intrinsic factors influence the effectiveness of gamified teaching methods. Emphasis on the learners' intrinsic factors regarding engagement and motivation aligns with Knowles' (1980) adult learning principles, where adult learners prefer self-direction. Thus, learning is optimised when adult learners are engaged and motivated through active participation (Adams et al., 2018; Brull & Finlayson, 2016; Mackavey & Cron, 2019; Zehler & Musallam, 2021). Brull and Finlayson (2016) used self-determination as the theoretical foundation of their study that values autonomy in learners. They identified that learners' intrinsic motivation depended on the game mechanisms or design. Brull & Finlayson (2016) attributed motivating mechanisms to well-defined achievable goals, points and levelling-up.

Games are perceived to be engaging, fun and motivating

(Brown et al., 2019; Havola et al., 2021; Koivisto et al., 2016; Kubin, 2020; Zehler & Musallam, 2021). These perceptions are attributed to innovation, points systems, immediate feedback, and competitiveness (Brown et al., 2019; Havola et al., 2021; Koivisto et al., 2016; Kubin, 2020; Zehler & Musallam, 2021). These perceptions align with Brull and Finlayson's (2016) findings that games positively affect learners' intrinsic motivation. García-Viola et al. (2019) used a validated scale to measure gameful experience, including enjoyment and creative thinking. They reported a "higher than average score" (García-Viola et al., 2019, p. 720). This finding suggests that the learners enjoyed the game and found the game helpful for creative thinking.

Games can be perceived positively, but there is a risk of adverse effects such as stress and over-competitiveness (García-Viola et al., 2019; Ignacio & Hui-Chen, 2020). Zehler and Musallam (2021) implemented their game with a low-stakes assessment to minimise the level of stress. Ignacio and Hui-Chen (2020) evaluated knowledge tests and observational assessment scores. The scores were compared between the experimental group involved in a web-based quiz game and the control group, which had a traditional lecture and paper-based quiz (Ignacio & Hui-Chen, 2020). Learners felt challenged and stressed to contend with or match other participants, suggesting that stress could be a motivating factor to think critically and solve the game (Ignacio & Hui-Chen, 2020). However, Brull & Finlayson (2016) caution that intrinsic factors and learners' negative experiences could hinder their learning experience.

Learners can also be affected by their previous experiences in gaming. Koivisto et al. (2016) found a significant difference in self-assessment scores in clinical reasoning between those who played games regularly and those who did not. Conversely, Adams et al.'s (2018) reported similar escape times between the new graduate and experienced nurses in an escape room, suggesting no differences.

Nurse educators must not assume that technology and games are accessible or fun for all nurses. Therefore, nurse educators must consider these intrinsic factors to facilitate an environment where learners are comfortable, motivated and ready to think critically.

### Escape Rooms

Escape rooms are a form of gamification where participants are locked in a space and must solve specific tasks to escape (Adams et al., 2018; Brown et al., 2019; Kubin, 2020). As a teaching method, escape rooms are also a trend in nursing education (Adams et al., 2018). Learners' comments contribute to the effect of the escape room on critical thinking. In Adams et al.'s (2018) study, an experienced nurse participant reported "I think it (the game) will help me in my everyday practice when it comes to critically thinking. Because we had to think through the problem" (Adams et al.'s, 2018, p. E4).

Similarly, Brown et al.'s (2019) survey included nursing students who agreed that the escape room game improved their critical thinking for urosepsis assessment and care. Mackavey and Cron's (2019) learners perceived the games as helpful for critical thinking. The perceptions from learners support the potential for gamification to foster critical thinking through practice opportunities.

However, a limitation reported for escape rooms is the potential for stress (Brull & Finlayson, 2016; García-Viola et al., 2019; Ignacio & Hui-Chen, 2020; Reed & Ferdig, 2021). Stress

*A limitation of traditional lectures is a lack of interaction, with adult learners preferring active participation and engagement...*

*Continued on page 30.*





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can negatively affect the learning experience by taking the learner's focus away from the learning content (Brull & Finlayson, 2016). The competition and time limits within the games induced stress in some participants (Brull & Finlayson, 2016; Ignacio & Hui-Chen, 2020). Including a debrief after the escape rooms also improved stress levels by allowing the participants to offload (Adams et al., 2018; Brown et al., 2019; Gómez-Urquiza et al., 2019; Kubin, 2020).

### Game-based learning in perioperative nursing education

Frederick and Reed (2021) provide an example of how escape rooms could be applied to perioperative nursing. Their study applied the Association of perioperative Nursing's (2020) Periop 101 curriculum into an escape room. They reported the participants found the escape room increased their confidence in some content and provided positive feedback on the escape room (Frederick & Reed, 2021, p. 93). Other games in perioperative nursing education range from word games to computer simulation games (Nasiri et al., 2019).

At Te Toka Tumai Auckland we have incorporated Kahoot! into our New to OR programme, based on feedback from previous participants. Kahoot! is used to review the programme's content with positive feedback.

However, further investigation is necessary and studies exploring critical thinking within perioperative themed games are required.

### Conclusion

Nurse educators must use innovative teaching strategies to train nurses, especially considering future workforce implications. Review of the literature has found that the game mechanisms of reflection and practice contribute to critical thinking. Escape rooms may be a satisfactory teaching method for critical thinking in novice perioperative nurses.

**About the author:** Ara Cho joined Te Toka Tumai Auckland (previously Auckland District Health Board) in early 2022 as the Nurse Educator Programme Coordinator for Āhua Tohu Pōkangia | Perioperative Services. Prior to this role, she was the Nurse Educator for North Shore and Waitakere Hospital Operating Theatres for four years. She started as a new graduate nurse at North Shore Hospital Operating Theatres in 2012. Ara has a passion for teaching and feels privileged to be in a role that specialises in training new to OR nurses and providing guidance to other nurse educators. She is currently on her last paper for her post-graduate diploma and is working towards a Masters specialising in nursing education.

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