APPSA

Association for Peri-operative Practitioners in South Africa

Journal

Vol 6 Issue 4 Nov 2020

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GENERAL INFORMATION

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

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

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REGULAR FEATURES

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

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

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

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

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

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

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

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

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

From The PRESIDENT

What a year we have lived through! *The Year Of The Nurse* was meant to be a celebration of us and our profession. It will certainly go down in the history books - but for all the wrong reasons. The world found itself stuck in the middle of a horrific pandemic, and South Africa's necessary hard lockdown ensured that APPSA has had no study days and no real interaction with you - our members - for a very long time. Many of us have lost colleagues, friends, and family. We have had to learn a new way of nursing and caring for our patients. Nursing, as we knew it, will never be the same again.

2020 held so much promise - and then COVID-19 struck. It trapped us in our own little bubbles, unable to travel, visit with family and, for four months,we were unable to move out of our provinces. Many lost their jobs, cars even homes. But the cost to families who lost loved ones has been hardest to bear. No visits to family in ICU. No time to say goodbye before loved ones passed on.

According to the Department of Health, by mid-November, more than 27 000 healthcare workers contracted the virus in the line of duty. This included 6 027 healthcare workers from the private sector, and 21 333 from the public sector. 240 healthcare workers died due to Covid-19 related complications, 203 of whom (85%) were in the public sector. Of those healthcare workers who were infected, 1 644 are doctors, 14 143 nurses, 28 port health workers and 11 545 categorised as 'miscellaneous' healthcare workers. We had the highest number of COVID-19 infections on the continent, and were the 13th most-affected nation, globally.

On a positive note, Pfizer's COVID-19 vaccine has been found to be 90% effective - which could be the major breakthrough that the world needs. But it has not received full FDA approval and is not yet available here. With that in mind, please remember that COVID-19 has not left us. The second wave is already here.

As we approach the 2020 festive holiday season, when celebrations and social gatherings with family and friends will happen, we cannot put ourselves, our families and our patients at risk. Continue to wear your masks, social distance, sanitise, and - to a greater rather than lesser extent - limit gathering in large numbers. We cannot put our health, and the health of our families, at risk.

2021 will bring new plans for us as people, as a country and as The Association for Peri-Operative Practitioners in South Africa. We hope to have an APPSA Congress in 2021 - and we want you all there to share it with us. Remember to pay your APPSA annual fees as your fees help keep APPSA alive.

On behalf of the APPSA National Executive Committee, we wish you all a bléssed festive season. Be strong. Stay safe. Stay healthy and God Bless.

Marilyn de Meyer

From The EDITOR'S DESK

I read a post on Facebook recently that really got me thinking: If, in 2015, anyone asked you where you saw yourself and your life in five years, what would you say about 2020? Could any of us have imagined what 2020 would have had in store for us, five years ago? I doubt it. I doubt anyone could have predicted the horror we have lived through during 2020.

I am sure there were many of us who were 'victims' of the global economic depression that really started to reveal itself in South Africa during 2019. Business (particularly in South Africa, but worldwide) had slowed down. The economy was stagnant. Unemployment figures were on the rise and retrenchments were the order of the day. I recall everyone I spoke to saying they couldn't wait for the year to end, and for 2020 to arrive. 2020 heralded a new decade, a fresh start. Everyone said they couldn't wait for 2019 to end to see a welcome change from the challenges we faced. Little did we know what lay ahead of us.

Proverbs 19:21 says: *Man plans. God laughs.* There has never been a more apt description of the year 2020 than that. Think about it. At every stage of our lives, we make plans, setting out where we want to go and imagining what we will be like when we have 'arrived'. Often, though, things have a way of not turning out quite as we had hoped or expected. That being said, nothing could have prepared us - the entire world - for 2020. This year will certainly go down in the annuls of history as the year the world stopped and everything we knew changed in a heartbeat. We all have momentous years in our memory banks: the year we fell in love, the year we had a child, the year lost a loved one, the year we changed careers ... there are any number of milestones we can choose from. But I sincerely doubt that anyone could have imagined a year quite like the one we have lived through.

BUT WE HAVE LIVED THROUGH IT! WE HAVE COME OUT ON THE OTHER SIDE. Not all of us are here, and that is a scar we will carry forever, but if you are reading this *Editor's Letter*, you HAVE come out on the other side. We have to continue to be vigilant - this pandemic is far from over - but this state of affairs will not last forever. Our lives will continue - albeit in an altered state from the state we are used to.

Let us use this festive season to cherish those around us. To love with everything we have. To devote ourselves to our families and our professions with 100% of our energy. If we go into 2021 with positivity and vibrancy, anything can, and will, be possible.

Have a bléssed and love-filled festive season. Be happy as you usher in 2021. It will make the world of difference - to you and the world around you.

Madeleine Hicklin

DISRUPTIVE BEHAVIOURS PERSIST
In The Peri-Operative Environment

By Kate Woodhead, RGN, DMS

INTRODUCTION

All members of the surgical team have the responsibility to each other - and to the patients in their care - to treat each other with civility and respect. A recent survey[1] has shown that bullying and harassment are still occurring in operating theatres/rooms around the UK. In fact, a short literature search on the subject demonstrated that there are many organisations relating to peri-operative care who have major concerns currently with this types of behaviour, and are actively running campaigns to address it.

Advisory, Conciliation and Arbitration Service[2] (ACAS) defines bullying as 'behaviour which is offensive, intimidating, malicious or insulting or an abuse of power through means intended to undermine, humiliate, denigrate or injure the recipient'. Harassment is defined as 'unwanted conduct which has the purpose or effect of violating an individuals' dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment for that individual'.

When events of either bullying or harassment occur within the peri-operative setting it is likely that the incident is witnessed by others. The incidents may be persistent or an isolated, one-off event. The forms that bulling and harassment take are many and varied, and may implicate a team, an individual, or a professional group. Whether or not a person has an intention to bully or harass is not what matters, it is how the behaviour is perceived by the victim that is important.

UNDER THE RADAR PROBLEM

Bullying and/or harassment is a problem that occurs quite frequently in the operating room (OR). It may happen for any number of reasons, including that there is a huge power imbalance between different members of the team - whether real or perceived. It doesn't matter, it is relevant. The stress of the situation in complex surgery can be the cause of the issue which means that it will pass and be excused by other members of the team due to the situation in which it occurred. One of the most common causes of stress in the theatre is caused by the unfamiliarity of other team members to each other, of equipment, or of infrequently-undertaken surgeries, or known complexity in the surgical or anaesthetic plan. There is also much pressure exerted from outside the OR by hospital management needing to deliver waiting list efficiencies, a lack of operating time each week, or lack of intensive care or high dependency beds, when needed. Some of the latter issues are modern problems due to the acute shortages of beds and staff - but they have only added to an existing problem.

In many independent hospitals there has always been the line that because the surgeons bring the business into the hospital, any behaviour they demonstrate must be ignored - in the name of business. NHS Trusts have a different issue, but one that continues to enable the bullies to manifest their disruptive behaviour as long as there are no patient safety incidents that occur as a result of the behaviours. Staff are expected to be resilient and to take it all in their stride, and many do.

Examples of disruptive behaviour which have been described are rudeness, belittling one in front of colleagues, swearing, throwing bits of kit or instruments around, blood-soaked swabs being thrown over the shoulder of the surgeon, physical attacks, deliberate breaching of sterility by a senior surgeon to a junior member of the team - and then making the latter leave the table to re-scrub. Foul and threatening language is frequent, as are derogatory and dismissive remarks. But the question we need to ask - actually **must** ask - is why do we continue to put up with it? This kind of disruptive behaviour leads to a toxic atmosphere where everyone else in the team behaves differently, more cautiously, for the remainder of the surgery.

When team dynamics are interrupted by poor behaviour, communication failures occur as everyone is treading on tenterhooks. And this is where the danger is: this is when there is greater potential and increased risk for patient safety incidents to occur. I can well remember times when important messages were not delivered due to the prevailing tension in the OR - often it was down to the scrub nurse to make a suitable judgement about when to interrupt and to break the tension, and then often getting berated for doing so, or not waiting quite long enough.

There is a frequently cited statistic of 65% of all sentinel events reported to the Joint Commission in USA having 'communication failures' as attributable to the adverse event.

The issues arising from the disruptive behaviours are infrequently reported formally from operating theatre departments, and indeed may only come to light when undertaking exit interviews with staff who are leaving because of them. In my experience, the hospital was never supportive when frequent, often weekly events took place, despite many of them being reported at the highest level. The incidents themselves were never investigated, nor mentioned in conversation. The culture was that the behaviour was ***expected*** and ***tolerated*** because the surgeon was senior, high profile and a 'perfectly reasonable human being' away from the stressful environment of the OR.

There are few statistics or data on the topic, as it is not identified as 'academic' or 'suitable for study' and yet it may be a critical element of the greater part of teamwork that sits at the core of most healthcare delivery. The study of human factors has certainly filled in many of the gaps in 'soft' areas of human behaviour in teamwork, and has added many useful insights. Creating a collaborative culture in the OR is far more likely to get the work done effectively and efficiently than having to avoid the person who is making dismissive and sarcastic remarks.

NHS STAFF SURVEY

Data from the most recently-published staff survey of those working in the NHS, which includes results from almost 500 000 staff across 230 NHS Trusts, alarmingly suggests that bullying cultures are pervasive. More than a quarter of all respondents reported bullying from managers or colleagues during the previous year[3]. In fact, 13.2 % of respondents identified **at least** one incident of being bullied or harassed by a manager, and nearly one in five (19.1%) reported at least one incident by another colleague. These statistics are alarming in any environment, but especially in a stress-driven OR where patient lives are often in the balance.

DISCRIMINATION

One area of bullying which should not be ignored - and which is in fact illegal under the Equality Act 2010 - is discrimination. Discrimination occurs due to personal characteristics or attributes,

including but not limited to gender, race, religion, sexual orientation, culture, ethnicity, disability and age. The effects may be more subtle than the behaviours described for bullying and harassment, and may be related to poor opportunities for education, never meeting holiday or day off requests, small punitive actions, or lack of career advancement chances. Actual or perceived discrimination may result in staff leaving or, more commonly, they manifest in a low morale and self esteem with lower performance levels and poor job satisfaction. Unaddressed, this may ultimately result in mental health issues, or sickness and absence.

The environment in which junior doctors and medical students are expected to learn still continues to shock and surprise onlookers. Sarcasm, belittling and denigration of character occurs frequently. In fact, the big take away from the recent best seller by Adam Kay[4] were the appalling conditions in which he was expected to work, and the frequent belittling behaviour he was expected to endure from senior colleagues. This could well explain why he left medicine to become an author and stand-up comedian. So severe and pervasive is this problem that the British Medical Association has a section of its website devoted to bullying and harassment, together with resources for doctors to use to help them to identify and mitigate the behaviours[5].

WHAT CAN BE DONE ABOUT IT?

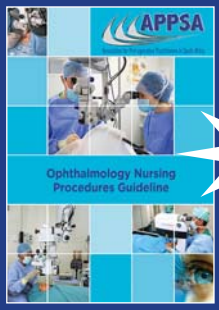
The appointment of Freedom to Speak Up Guardians[6] in all NHS Trusts in England should make a big difference, in that it will enable victims to speak up. The reporting mechanism makes each report a completely confidential matter. Reports have shown that more than 45% of the cases that Guardians dealt with during the 2018 reporting year were related to bullying and harassment. In addition there is a free, independent, confidential helpline for people working in the NHS and social care organisations, operated on behalf of the Department of Health and Social Care.

However, most Trusts will have mechanisms for local reporting via the Freedom to Speak Up Guardian, via the employees direct line manager, or directly to Human Resource Department. Trusts will have health and well-being policies as well as whistleblowers policies, depending on the severity of the impact to the employee. Freedom to Speak Up Guardians were set up following a report[7] by Sir Robert Francis following the issues in mid-Staffordshire Trust as he felt that the NHS did not encourage or support workers to speak up - and that both patients and staff suffered as a result. One of the most important elements of the Freedom To Speak Up Guardians role is to listen and make sure that the issue being reported is responded to. Trusts that have a 360-degree performance feedback mechanisms in place can be clearer that if the feedback is honest, then some of the bullies who often have a lack of personal insight on their behaviours, will be told by colleagues and co-workers that their behaviour is unacceptable.

CULTURAL CHANGE

If we are to tackle the enormous shortfall of nursing numbers in the NHS at present, which is said to be greater than 43 000 by the National Audit office[8], whose data we can trust; we need to start offering some cultural change as well. If we do not address this adequately, we will merely be filling at the top while leaking from the bottom. Perhaps it would be simpler to influence change in the OR first - and then roll out the successes thereafter. In my experience, many of the perpetrators of poor or disruptive behaviour in theatres do not demonstrate these difficult behaviours elsewhere in the hospital, especially in patient areas. However, we must not continue to tolerate actions which lead to patient safety incidents and staff leaving.

APPSA GUIDELINES



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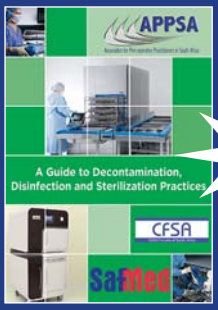

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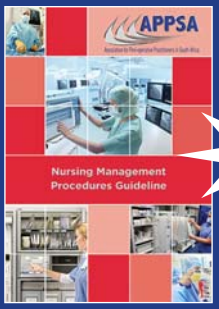

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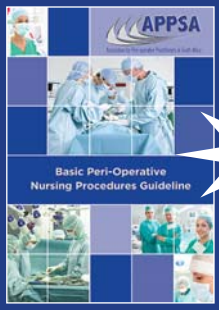

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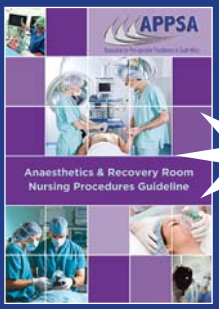

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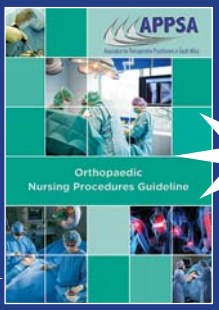

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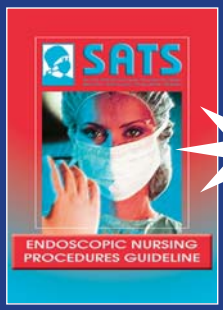

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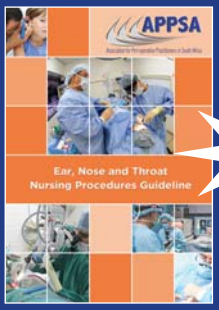

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Action needs to be taken within the ORs - by team leaders and theatre managers - to speak up, and address the issues, recognising the impact that poor culture has on the team. 'Having a word' can be done simply, confidentially, sympathetically and after the event. It does not have to be done in the exact moment in time in which it happened, but addressing it straight after the event will enable managers and leaders to shine a light on the impact the disruptive or abusive behaviour is having on the team at large. There are many surgeons with whom very few staff want to work. This becomes a vicious circle as when the chosen one is on holiday, all hell breaks loose, due to unfamiliarity of the replacement, however good they may be. Managing this situation is not easy and requires the manager to have considerable skill and good inter-personal relationships with the surgeon and the victim. The timing has to be correct: the situation cannot be left for too long before tackling the individual(s) at fault. The difficult aspect of this for the theatre manager or team leader is that one has to deal with the behaviour, while still allowing a fully, mutually respectful long-term relationship to be in place.

CONCLUSION

There is an unspoken element of this situation, and that is that a surgeon needs to have a great deal of self confidence and an ego in order to pick up a scalpel and make a pristine cut. Many theatre staff recognise this, despite hating the behaviours that go with the territory. The Association for Peri-operative Practice, the Royal College of Surgeons in Edinburgh and the Royal Australasian College of Surgeons all have current campaigns related to reducing the frequency of bullying in surgery and increasing the awareness of the behaviour. This has been done in order to reduce the occurrence of the behaviour and the concomitant and inevitable fallout. Many other organisations also have active campaigns or information and education on their websites. We owe it to ourselves and our co-workers to develop greater resilience, to reduce the frequency of such disruptive behaviour, and to highlight awareness to enhance patient safety for everyone's sake.

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This article first appeared in the Clinical Services Journal in April 2020. It appears here, courtesy of the author. Kate Woodhead qualified in 1978. She has worked in peri-operative care since then and runs her own business as an Operating Theatre Consultant. Kate was Chairman of NATN from 1998 to 2001. She is the former President of the IFPN (2002 to 2006) and now works as an Advisor to WHO on the Safe Surgery Saves Lives Campaign. She is the Chairman of Trustees at Friends of African Nursing. For more information on FoAN please go to www.foan.org.uk.

ARE YOU RUNNING On Empty?

By Sheila Allen, BSN, RN, CNOR, CRNFA(E)

INTRODUCTION

The World Health Organisation (WHO) designated 2020 as the '*International Year of the Nurse and the Nurse Midwife*' to honour the 200th anniversary of Florence Nightingale's birth. Nightingale was a visionary and a leader. Her writings and teachings are the foundation of our practice of nursing. At the time the announcement was made, we had no idea the challenges we would face because of a unique pandemic. On 11 March 2020, the same WHO declared COVID-19 a pandemic, and all over the globe, nurses and other healthcare professionals have been working diligently around the clock to care for those affected by the virus. Now providers face the mental and physical effects of compassion fatigue and burnout.

Nurses have always risen to the myriad of challenges for as long as the profession has existed, and not because of a special designation. Nurses are nurturers because at the heart of our profession are compassion and empathy. During times of spiritual, physical, and emotional anguish, it is to nurses that people rely to provide medical treatment, encouragement and support. In 1975, Figley said: "There is a cost to caring. Professionals who listen to clients' stories of fear, pain, and suffering may feel similar fear, pain, and suffering because they care. Sometimes we feel we are losing our sense of self to the clients we serve."

When speaking of nursing, we can easily substitute the word 'patients' for 'clients' in this quote. But the question remains: who nurtures the nurses?

COMPASSION FATIGUE VS BURNOUT

Dr Chelsia Harris contends that *burnout* is often mistaken for compassion fatigue. She views burnout to be triggered by increased workplace demands, lack of resources, increasing healthcare expectations in general, and organisational policies that lead employees to feel the effects of cynicism, diminished caring, and ineffectiveness. Harris defines *compassion fatigue* as the spiritual, emotional, and physical response to chronic self-sacrifice and/or prolonged exposure to difficult situations that leave a person unable to love, nurture, care or empathise with the suffering of another. It is evident why there is overlap in the interpretation of the two conditions. Nurses become nurses to serve, to heal, to care, to provide compassion, and to advocate for those to whom we serve. Because of the challenges of this unique virus rendering treatment modalities that are unsuccessful, increasing pressure to perhaps perform out of the usual practice, and the continual sense of trauma and loss, the internal struggles for nurses and other healthcare providers may be magnified. Said Harris: "Ultimately when you're not being filled up, then you're empty. You can't give any more. Couple that with the physical needs and the external forces, and it's a train wreck for the well-being of the nurse."

So what exists in your culture of care that perpetuates compassion fatigue?

- Staffing
- Scheduling

- 'I don't have time for lunch'
- 'I haven't taken a vacation in years'
- Poor communication
- Lateral violence or bullying

Other definitions of compassion fatigue and burnout seemed to clarify. Compassion fatigue is described as the pre-occupation with absorbing the emotional stresses and trauma of others to create a secondary traumatic stress in the caregiver. Prolonged exposure to this stress can build up emotional residue that may not be easily identified. Burnout can occur in any profession and is primarily about being 'worn out'. These stresses are easier to identify and can be connected to direct links in the work or home environment. Secondary trauma is associated with compassion fatigue and can lead to vicarious trauma which is the cumulative transformative effect on the professional working with survivors of traumatic life events.

The table below offers some of the signs, symptoms, and triggers of compassion fatigue and burnout that may assist in formulating an understanding of the nuances of the two conditions.

TABLE I. COMPASSION FATIGUE VS BURNOUT

COMPASSION FATIGUE SIGNS:	BURNOUT SIGNS:
• Sadness and grief	Fatigue
• Avoidance or dread of working with some patients	Anger
• Reduced ability to feel empathy to patients or family	Frustration
• Somatic complaints	Negative reaction towards others
• Nightmares	Cynicism
• Addiction	Negativity
• Absenteeism	Withdrawal
• Detachment	
• Exhaustion	
• Anger or irritability	
• Impaired ability to make decisions	
• Decreased intimacy	
COMPASSION FATIGUE SYMPTOMS:	**BURNOUT SYMPTOMS:**
• Headaches	Physical
• Digestive problems	Psychological
• Muscle tension	Cognitive
• Fatigue	Relational disturbances
• Cognitive shifts	
• Relational disturbances	
• Poor concentration, focus and judgement	
• Feeling overwhelmed/hopeless	
• Limited tolerance for stress	

COMPASSION FATIGUE TRIGGERS

- Personal characteristics
- Previous exposure to trauma or other life challenges
- Empathy and emotional energy
- Prolonged exposure to trauma material to clients/ patients characteristics
- Response to stressor
- Work environment
- Work-related attitudes

BURNOUT TRIGGERS

Personal characteristics
Work-related attributes
Work-organisational

Regardless of the term used to describe the condition, the challenge is to recognise the symptoms early in the process, or to be pro-active with self-care and life-balance strategies to minimise the impact of all the stressors in the age in which we find ourselves.

MANAGEMENT AND SELF-CARE STRATEGIES

Recognition of the existence of compassion and burnout is pivotal to developing all those interventions and strategies to manage or lessen the impact on a facility or on a personal level. Some tactics for healthcare administrators to use on an organisational level to combat compassion fatigue are the following:

- Provide on-site counselling
- Debriefing
- Time-outs
- Education
- Talk about it
- Nourishment
- Form support groups and/or buddy systems
- Treat employees wholeheartedly

Facilities can take a critical look at what is within their control - and this includes turn-over rates, caregiver dissatisfaction, and absenteeism.

Often nurses are generous with their help or assistance; however, they may have difficulty accepting help from others. Taking time for self and seeking work/life balance are the first steps in self-care. Strategies suggested for simple steps to take are as follows:

- Get adequate sleep
- Get adequate nutrition
- Determine personal coping strategies
- Attend to spiritual needs
- Take time away from stressors
- Intentionally take time for hobbies and enjoyable activities

Simply put: Say 'yes' to taking a breath, taking a break, creating a mindset of abundance, self-respect, and an attitude of gratitude. Say 'no' to lateral violence (gossip), taking on the emotions/reactions of others, conventional thinking, and living like 'oops'.

Five other approaches to keep from running on empty are the following:

1 **Self-regulation:** learning how to relax and achieve a feeling of peace
2 **Perceptual maturation:** learning how to manage perceptions and regulate thinking
3 **Intentionality:** making a personal decision and actually writing a promise or pledge of how to live and work
4 **Support and connection:** form a network of support, recognising the uniqueness of others
5 **Self-care and revitalisation:** creating a plan that includes healthy living and diversional activities

It is easy to get bogged down with the 'busy-ness' of our lives. As nurses, we are inclined to take on any project at the expense of our own goodwill and sanity, or our ability to be kind to the person who matters most to our existence: ourselves. With our nursing degree, we seem to pick up the bad habit of self-recrimination. We chastise ourselves because we are not fast enough, or smart enough, or cannot be super-nurse or super-mom. We forget that we also need to nurture ourselves and take time to rejuvenate our spirit.

There was once a Chinese water bearer who had two large pots that he carried on a long pole across his shoulders. One pot was absolutely perfect while the other had a crack in it. The perfect pot always delivered a full allotment of water after the trek to the stream each day, while the cracked pot only arrived half full. For two years, the water bearer made his way to gather water each day. As you can imagine, the perfect pot was proud of his accomplishment; however, the cracked one was ashamed of its imperfection and sad that he could not deliver a full jug of water. After two years of feeling as though he was a failure, the cracked pot spoke to the water bearer.

The pot spoke of his shame to be unable to deliver a full measure. The water bearer said to the pot: "Did you not notice there were flowers along only your side of the path and not along the perfect pot's side? That is because I have always known of your flaw. I planted flower seeds along your side of the path and each day you watered them as we returned from the stream. For two years I have been able to cut beautiful flowers for our table. Without your being as you are, there would be no beauty to grace our home."

Each of us has our own unique flaws; we are all cracked pots. Nevertheless, the cracks and flaws we have make our lives interesting and very rewarding as we work together. We need to celebrate each other's uniqueness and work together to find the rewarding balance.

CONCLUSION

In these troubled times in which we find ourselves, compassion fatigue and burnout will likely become prevalent. We need to recognise that they exist and work toward minimising the impact on patient care and importantly, on the care we give each other, to keep ourselves from running on empty. There is a certain spirit, a depth of soul, that is unique to nursing. We are involved with death, birth, extreme despair, suffering, life-altering trauma, joy and rage on a daily basis. Most individuals experience only a limited number of these in a lifetime. We are obligated to work

together to create a work environment to maintain a positive outcome for all involved. Regardless the size of the action you take to impart kindness, the impact can be immeasurable. Frequently the small acts of kindness are cherished most and remembered fondly.

Thank you for the many things you have shared with me over the years. May you continue to give and receive the 'little things' that mean the most - a smile, a kind word, a hug.

May you continue to be blessed and take care of yourselves - and each other.

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CARE PLAN FOR THE POLY-TRAUMATISED PATIENT
With Hypovolaemic Shock

By Maria ZC Chamorro*, Gema R Zarrallo, Adela G Luque, Mosa M Terroso

INTRODUCTION

Multiple trauma is defined as the coexistence of multiple lesions or injuries, and any combination of these could pose a life-threatening risk to the victim[1 - 3]. However, although this definition has been in use for years, there is no consensus to identify patients with multiple lesions or injuries. In fact there are several synonyms in literature including describing patients as a critical patient with trauma, patients with multiple lesions, a multiple trauma patient or 'poly-trauma'[4]. These assessment scales represent an important tool in identifying the severity of the injuries of patients with multiple injuries.

There are several scales one can use, including the Injury Severity Score (ISS) of 1974 - based on the sum of the squares of the individual severity of the three most affected injuries - which is measured with the Abbreviated Injury Scale (AIS), the scale most used in practice in Europe and the United States. A cut-off point has been established to define a major trauma with an ISS value of ≥ 16 points[2 - 4]. Previous studies showed that the subjective definition of multiple trauma can differ both from an inter-hospital and intra-hospital[1 - 4] perspective, and the need arose to agree on a definition that took into account measurable objective parameters to predict mortality in patients with multiple trauma. Berlin's definition of 2014, includes assessing the physiological and anatomical parameters with the classification of the severity of the AIS injury ≥ 3 in at least two lesions, ISS ≥ 16 points and at least one of the following five physiological parameters: hypotension (systolic blood pressure ≤ 90mmHg), acidosis (excess of base ≤ - 6.0), coagulopathy (international normalised index ≥ 1.4/partial thromboplastin time ≥ 40 s), level of consciousness (Glasgow comma scale ≤ 8) and age (≥ 70 years) [2-5].

Poly-traumatised patients experience mortality rates of 20%, and severe trauma represent the first cause of mortality in developed countries, due mainly to traffic accidents in the majority of cases[4, 6]. Mortality due to severe trauma is divided into three peaks, the first peak of pre-clinical mortality (the first few minutes), the second peak between the first and the fourth hour, and the third peak occurs later - often weeks later. In the first 24 hours, approximately 90% of deaths are caused by primary trauma due to brain or spinal injuries and severe haemorrhages, while secondary mortality is caused by multi-organ failure, sepsis or respiratory failure, which are some of the complications most common during hospitalisation[2]. The location of the injuries has an impact on the clinical course of the poly-traumatised patient, specifically the injuries at the level of the thorax and the long bones; the clinical definition is determined by haemorrhagic shock, coagulopathy, hypothermia and soft tissue injuries.

The initial treatment of poly-traumatised patients is essential, detecting and treating those life-threatening injuries following the A, B, C, D, E rules for initial assessment. The treatment focuses initially on the protection and management of the respiratory tract, relieving pneumothorax and haematothorax for example (A - airway, B - breathing), the control of bleeding and volume

therapy (C - circulation), the state of consciousness (D - disability) and the protection and prevention of secondary organ damage (E - exposure). Subsequently, the clinical course of treatment of the patient must be considered, until one is able to achieve a haemodynamic stability that allows surgical intervention to repair the injuries. For this to occur, it is necessary that the patient meets the requirements of haemodynamic stability, lactate, diuresis, respiratory function, and coagulation with parameters within normal range, as well as a stable body temperature[2].

Poly-traumatised patients, therefore, represent a challenge for healthcare workers in all disciplines, and their management requires the joint inter-disciplinary work of emergency units, resuscitation units, intensive care units, surgery and traumatology, as well as the subsequent rehabilitation component. This multi-disciplinary team is composed of various health professionals, doctors, nurses and physiotherapists, to name a few, who take care of the patient to guarantee the quicker recovery and the smaller number of possible sequelae[7]. The initial treatment of a poly-traumatised patient is a determining factor in his survival; therefore nursing activities are fundamental to that success. From the initial a correct assessment, to the application of prescribed treatment and specific care to ensure the survival and decrease of potential sequelae of the trauma patient. The aim of this paper is to show, through documentation of a clinical case of a poly-traumatised patient with a hypovolaemic shock, the clinical course and care plan carried out by the nurses in a resuscitation unit to save a patient's life and restore him to health.

CASE REPORT

A male over the age of 65 entered the resuscitation unit of a public management hospital after assessment and initial treatment in the emergency department. He had been subjected to a high-energy impact when he was facing away from a truck that was reversing. He was trapped under the vehicle, falling to the ground, face first. He reported pain in the left hip, left arm and abdomen.

Primary assessment in the emergency department

A Permeable airway

B Eupneic, with partial oxygen saturations correct. Spontaneous ventilation with normal thoracic mobility. Normal respiratory auscultation

C No signs of macroscopic active bleeding. The patient displayed a tendency to hypotension 84/4mmHg and heart rate (HR) of 92bpm (beats per minute)

D Conscious, reactive pupils. Glasgow 14 to 15. Presents territory of hypoesthesia in L4 - L5. He does not have episode amnesia

E He does not have open fractures. Excoriations in the lower left limb (MII) at the peroneal malleolus level. Receives initial treatment by the emergency department, with the administration of saline 0.9% at high infusion speed and immobilisation on a spinal table and vacuum mattress. A complex fracture of the pelvis with signs of instability from the radiological point of view and fracture of the right ilio-pubic ramus is noted, with the separation of the osseous ends. This is verified by diagnostic imaging with a computed tomography (CT).

The patient entered the unit with the following clinical indications: he displayed hypovolaemic shock of a poly-traumatised patient. During his stay in the resuscitation unit, a complete patient assessment was undertaken based on Marjory Gordon's functional patterns[8] to establish the

appropriate care plan. The care provided in the clinical case is carried out by the nurses in the unit assigned to each patient's shift. Such plans includes assessment, diagnosis, interventions, results and evaluation of the care plan[9].

Valuation by functional patterns of Marjory Gordon

The nurses perform an assessment of the patient's condition, through the 11-functional health patterns of Marjory Gordon protocol. Here, objective as well as subjective patient data is recorded. This serves to organise the information and subsequently define a nursing care plan and a nurse practitioner with the correct skills level, according to the risk or real problems detected[8, 9].

Pattern 1: Perception and health management:

A patient admitted to the resuscitation unit after a high-energy impact after being hit by a truck. The patient presents with pelvic fractures. The patient's personal history reveals he suffers from poorly controlled diabetes mellitus type 2, diagnosed two to three months ago. He is currently on metmorphine and insulin therapy. The patient also has a history of arterial hypertension. He has suffered with this condition for between six and eight years. Treatment is dyslipidemia with statins. He has no known allergies.

Upon admission to the unit, the following pharmacological treatment is prescribed to maintain stable haemodynamic status: Enoxaparin 20mg, vitamin K, furosemide 10mg, albumin 20%, noradrenaline to maintain >75mmHg the mean arterial pressure, metamizol 2gr and paracetamol 1g every eight hours. Insulin regular human subcutaneous every four hours according to protocol. Broad spectrum antibiotic therapy. He is also informed that he will be operated on in the next few days to stabilise the pelvic fracture. On the sixth day after admission to the unit, pre-anaesthesia preparation is performed for the surgical intervention.

Pattern 2: Nutritional – Metabolic:

Before the surgery, the patient follows an diet of clear fluid therapy with hydro-electrolytes. After continuous monitoring with fluid therapy and absolute diet, enteral feeding via a naso-gastric tube in introduced post-operatively. Mucous membrane evaluation: the patient has bruises on the chest and abrasions on the lower left limb. He presents generalised oedema with a positive water balance of 11litres. He also presents with oedema in scrotum and flictenas in lower limbs. On admission he has no fever, but on the fifth day after admission, he presents with a fever and an increase in blood leukocytes. Antibiotic prophylaxis is prescribed, which begins in the operating room.

Pattern 3: Elimination:

Forced diuresis with furosemide. Clear urine is removed via a urinary catheter. The antibiotic therapy causes him to suffer severe diarrhoea and a rectal probe is placed. He presented with abdomen distended and with hydro-aerial noises.

Pattern 4: Activity - exercise:

Cardiovascular state: The patient enters with sinus rhythm but tends towards hypotension episodes. On numerous occasions, the administration of vasoactive drugs with Noradrenaline are required and the patient is stabilised with an average blood pressure of 60mmHg. Upon admission, the patient presented low haematocrit and haemoglobin. Poly-transfusions were administered, comprising nine haematite concentrations and four fresh frozen plasma units.

Respiratory state: During the surgical intervention the patient is connected to mechanical ventilation with orotracheal intubation. This results in nosocomial pneumonia and a large amount of mucus with frequent aspirations of mucous are necessary. The patient has limited mobility because of his multiple factures. Being bedridden, he is also in need of assistance with the daily efforts of hygiene and washing.

Pattern 5: Sleep-rest:
Due to the pain and trauma suffered in the accident, the patient experiences trouble sleeping. Analgesics and sedatives must be administered to ensure the patient gets some sleep.

Pattern 6: Cognitive - perceptive:
Upon admission, the patient is conscious and oriented. From admission until surgery, the patient reported pain in the injured parts. He also presented intermittent states of agitation and confusion. Analgesics and sedation were necessary for pain management and peace of mind.

Pattern 7: Self-perception - self-concept:
The patient stated that in recent years has noted a decline in his health - particularly with the diagnosis of the different pathologies he has been faced with in hypotension and diabetes. This accident has made him feel very vulnerable.

Pattern 8: Role-relations:
The patient has confirmed that he is a retired gentleman. While in our care, he receives daily visits from his wife and son, both of whom are pleased to see his progress.

Pattern 9: Sexuality - reproduction:
The patient not report any problems during admission.

Pattern 10: Coping - tolerance of stress:
The patient does not have amnesia from the accident. At one point he was very agitated, confused and scared. Subsequently, effective communication became difficult to establish due to the state of sedation that occurred after medical intervention. At times the patient was agitated and confused, and physical measures were taken to assist him. This included the administration of Midazolam 5mg to calm him down.

Pattern 11: Values - beliefs:
Neither the patient nor his family have requested any faith-based assistance or counselling during the stay in the unit.

CARE PLANS

Table I shows the main results derived from the present clinical case: diagnostic label, care planning and follow-up/evaluation after its execution, elaborated upon according to standardised nurse taxonomy (NANDA, NIC, NOC)[10 - 12]. The results indicators detail the starting point and the expected results after the provision of care by nurses in the unit. There are several issues that need to be resolved to achieve the expected result. These were observed during the patient's stay in ICU: 0601 Water balance; 0504 Renal function; 0411 Response of mechanical ventilation: adult; and 2102 Pain level.

Table 1. NANDA diagnostics with the corresponding NOC, NIC and activities

00004 Risk of infection related to fluid retention.			
NOC Outcomes	**Scale from serious (1) to uncommitted (5)**		**NIC Intervention**
(0204) Consequences of immobility: Physiological.			(740) Care of the bedridden patient.
Indicators	Initial	Last	Place the patient on an anti-decubitus mattress.
	Value	Value	
20408 Urinary retention	2	4	
20409 Fever	During the patient's entry into the unit.		(3590) Surveillance of the skin. Observe in each shift if there is redness, extreme heat, edema or drainage of the skin or mucous membranes.
			Evaluate in each morning shift the state of the incision area, if necessary, proceed to change the dressing and cure the incision site.
			Monitor the condition of the skin, on the days of his admission, there appear blisters in the lower limbs, and a daily pattern of cures is initiated, and protections are placed on the heels.
00026 Excess fluid volumes related to compromised regulatory mechanisms manifested by generalized edema.			
NOC Outcomes	**Scale from seriously compromised (1) to uncommitted (5)**		**NIC Intervention**
(0601) Water balance. Indicators:	Initial	Last	(2100) Hemodialysis therapy Registration of vital signs every hour. Start hemodialysis according to optional order.
60110 Ascitis	Value	Value	Monitor blood pressure, pulse, respirations, temperature and patient response during dialysis. Adjust the filtration pressures to extract an adequate amount of liquid.
60102 Average blood pressure	1	4	
60115 Thirst			
(0504) Renal function.			(1056) Enteral feeding by nasogastric tube.
Indicators:	Initial	Last	
50402 Balance of intake and diuresis			Observe if there is feeling of fullness, nausea and vomiting. Before each intermittent feeding, check for residues. Observe if there are signs of edema or dehydration. Control the intake / excretion of liquids.
	Value	Value	
50406 Urine color: normal.	2	5	
50411 arterial pH between 7.35-7.45	During the patient's entry into the unit.		(0590) Monitoring of urinary elimination. Placement of Foley probe No. 16, connected to a urine bag with a meter.
			Measure diuresis every hour and balance at 12 o'clock at night. Start the water restriction protocol since signs of edema in lower and upper limbs are observed.
00033 Impaired spontaneous ventilation related to intraoperative blood loss of 2500 cc manifested by decreased arterial oxygen saturation			
NOC Outcomes	**Scale from seriously compromised (1) to uncommitted (5)**		**NIC Intervention**
(0411) Mechanical ventilation response: adult			(3300) Mechanical ventilation management: invasive.
			Ensure that the fan alarms are connected.
Indicators:	Initial	Last	Check all fan connections regularly.
41131 Lung infection	Value	Value	Observe if there is a decrease in expiratory volume and an increase in inspiratory pressure.
	2	5	
41112 Oxygen saturation	During the patient's entry into the unit.		
41111 arterial pH			Control the amount, color and consistency of pulmonary secretions, and document the results periodically.
			(3160) Aspiration of the airways.
			Aspiration of the airways before nebulization and whenever necessary.
			Monitor the patient's oxygenation status neurological status and hemodynamic immediately before, during and after the suction Aspirate the oropharynx after finishing the tracheal suction.
			Clean the area around the tracheal stoma after finishing the tracheal aspiration, as appropriate.

00132 Acute pain related to polytrauma manifested by verbalization of the patient and facial expression of pain

NOC Outcomes	Scale from Serious (1) to always proven None (5)		NIC Intervention
(2102) Pain level.	Initial	Last	(2260) Management of sedation
Indicators:	Value	Value	Review other medications that the patient is taking and check the absence of contraindications for conscious sedation.
210208 Restlessness	2	5	Determine baseline vital signs, oxygen saturation, electrocardiogram, height and weight. Check the level of consciousness according to the protocols of the center.
210211 Heart rate			Ensure that emergency resuscitation equipment is readily available.
210206 Facial expression			
(2109) Level of discomfort.			
Indicators:	Initial	Last	
210901 Pain	Value	Value	Canalization of a large-caliber peripheral venous line. Administer medication according to medical prescription or protocol (with care) and according to the patient's response.
210903 Anxiety.	1	5	
210903 Groans.			
210914 Restlessness.	During the patient's entry into the unit.		(2210) Administration of analgesics.
			Choose the appropriate analgesic or combination of analgesics when prescribing more than one according to the type and intensity of pain.
			Monitor vital signs before and after the administration of narcotic analgesics, with the first dose or if unusual signs are observed.
			Evaluate the efficacy of the analgesic at regular intervals after each administration, but especially after the initial doses, and should also be observed if there are signs and symptoms of adverse effects.

DISCUSSION

The plan of care was based on the Zero Bacteriemia protocols, diabetes control in the critical unit, care of the patient bedridden with mechanical ventilation, and the poly-traumatised patient. As a result, the patient's recovery and discharge from the resuscitation unit was achieved 21 days after his admission. The patient's progress is observed, monitored and recorded from his admission, with pre-surgical and post-operative interventions noted, as well as measures employed at resolving the complications that occurred during his stay in the unit. This included hypovolaemic shock - typical of the clinical course of severe trauma[2] - the appearance of nosocomial pneumonia, post-surgical intervention for the use of mechanical ventilation. This type of nosocomial pneumonia is a subgroup of nosocomial pneumonia that occurs around 48 to 72 hours after tracheal intubation, and which affects between 10% and 20% of patients with mechanical ventilation[13].

The proposed NANDA diagnoses have been resolved or progressively improved during the patient's stay in the unit, recorded each day with the NOC indicators, and he is discharged to the traumatology unit. Once in the traumatology unit, the patient will continue with his care focused on the trauma he suffered. He is conscious and oriented, with a urinary foley catheter and nasogastric tube for enteral feeding *in situ*. His delayed nosocomial pneumonia has been resolved after an antibiotic therapy protocol was introduced and followed. The retention of liquids and the patient's generalised oedema has improved dramatically, with nursing care geared towards realising an adequate fluid balance. The patient has achieved spontaneous ventilation without the need for mechanical ventilation. His pain has been controlled with appropriate analgesic treatment.

The main limitation of the present study is that it is derived from the analysis of a single clinical case as opposed to a representative sample of the population. Comprehensive extended

clinical results obtained can not be extrapolated. However, the initial objective of applying a care plan for a poly-traumatised patient with hypovolaemic shock is met, and is able to be successfully replicated.

CONCLUSIONS

This clinical case serves to illustrate a prevalent reality in clinical practice: emergency units are often presented with a patient with multiple traumas following traffic accidents. These are very common throughout the world, and the intervention of a multi-disciplinary team cannot be stressed enough to resolve the case as soon as possible. This ensures only minor sequelae, with the emphasis on the fact that the nursing professionals having a very important role to play in the return to good health of the patient. The nursing team must be part of the programme to establish a plan of care which can be adapted for each patient.

ETHICAL APPROVAL

Not applicable.

AUTHOR CONTRIBUTION

All authors participated in the interpretation and reporting of the study's outcomes.

COMPETING INTERESTS

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PRE-OPERATIVE ASSESSMENT
In Ophthalmic Regional Anaesthesia

By Dr HL Gordon, MB, ChB, FRCA

INTRODUCTION

This review will focus on cataract surgery, the commonest ophthalmic operation performed under regional anaesthesia. However, the points made are applicable to other ophthalmic operations if they can be performed under regional block. Around 80% of patients presenting for cataract surgery are >70 yr of age and 57% have pre-existing medical problems[1]. Regional anaesthesia is therefore preferable as it should be associated with lower morbidity and causes minimal disruption to daily routine. However, this does not release the anaesthetist from the responsibility of performing a thorough pre-operative assessment. Regional anaesthesia can have both ocular and systemic complications, many of which are avoidable if pre-disposing factors are identified and, where possible, controlled before surgery[2, 3].

GENERAL ISSUES

Pre-operative clinics are generally undertaken by nurses who assess the patient's overall condition. However, the final responsibility rests with the surgeon and the anaesthetist. Matters such as the patient's ability to lie in the appropriate position for the operation, their ability to comply with instructions, their suitability for day care and how they will travel to and from hospital on the day of operation can be assessed at this time. Factors identified at this assessment that affect any part of the surgical episode must be identified and communicated to the relevant members of the surgical and anaesthetic team.

The pre-operative assessment should be carried out within three months of the expected date of surgery, and the results recorded on a checklist that is completed before the patient enters the operating room (OR). As many patients have significant concurrent disease, it is advisable to perform brief checks on the day of surgery to ensure that there have been no important changes since the formal pre-operative assessment. Exceptions to this are in areas that do not change, such as axial length, for example. Any changes in the patient's condition or therapy must be identified and appropriate action taken.

At the pre-operative clinic, many units provide patients with general details about the techniques that are likely to be used in their case, and about the potential risks and complications. The practitioners actually doing the case will discuss the fine detail on the day of operation. Apart from establishing a good doctor-patient relationship, the main aims of the anaesthetic pre-operative assessment are to identify high-risk and potentially difficult cases and plan the appropriate management.

MEDICAL ASSESSMENT

Even when the patient is undergoing regional anaesthesia, it is advisable to know about their general health, as this could influence the conduct of the whole procedure. In addition to details of previous illnesses, anaesthesia and surgery, ***Table 1*** below lists items of particular relevance to ophthalmic cases performed under regional anaesthesia.

TABLE 1. CONCURRENT MEDICAL CONDITIONS AND THEIR IMPLICATIONS FOR OPHTHALMIC SURGERY PERFORMED UNDER REGIONAL ANAESTHESIA

PROBLEM	IMPORTANCE
Cardiovascular: Hypertension (>180/>100), ischaemic heart disease, cardiac failure, orthopnoea, arrhythmias, pacemaker, valvular problems	Implications for likely reaction to stress, sensitivity to sedative drugs and positioning. Stress may provoke ischaemic ECG changes, and patients may experience angina during surgery. Patients should not have surgery within three months months of a myocardial infarction. Antibiotic prophylaxis is not required for patients with valvular problems
Respiratory: COPD, orthopnoea, sleep apnoea, need for domiciliary oxygen	
Diabetes	Risk of intra-operative hypo-glycaemia
Epilepsy and tremor	Must be well controlled. Head movement caused directly, or indirectly by transmitted movement, may preclude regional anaesthesia
Medication, especially Warfarin, anti-platelet drugs, cardiac, respiratory and anti-diabetic drugs	Risk of bleeding with a needle block. Knowledge of medication also gives an indication of the severity of concurrent disease
Allergies	May preclude the block being placed or the operation being done under regional anaesthesia.

A number of patient characteristics can significantly influence the smooth conduct of the operation. These include claustrophobia and panic attacks, lumbar spine problems and obesity (this can affect positioning), and communication problems, for example deafness or dementia. A full clinical examination is not necessary. However, heart rate and blood pressure should be checked and repeated if abnormal at the first assessment. Check also for the presence of significant dyspnoea, cough, tremor and abnormal body movements.

LABORATORY INVESTIGATIONS

Laboratory and X-Ray investigations are only needed when the history or a finding on physical examination indicates them. In the vast majority of cases, a history and clinical examination will suffice. The main indications for ECG and blood tests are listed in **Tables 2 and 3** below.

TABLE 2. MAIN INDICATIONS FOR A PRE-OPERATIVE ECG

- Irregular pulse or history of palpitations
- Pulse excessively slow or fast on repeated checking (<50 or >100 min^{-1})
- Chest pain, especially if recent onset
- Uncontrolled hypertension on repeated checking (>180 systolic, >100 diastolic, or both)
- Pacemaker, particularly if the patient has symptoms reminiscent of those experienced before the pacemaker was inserted
- Syncope

TABLE 3. MAIN INDICATIONS FOR PRE-OPERATIVE BLOOD TESTS

INDICATION	TESTS
Warfarin	An INR should be done unless the patient attends an anti-coagulant clinic regularly and has a stable INR or unless the INR has been done recently and is in an acceptable range. The recommendation in the UK and the US is that, for cataract surgery, the INR should be in the therapeutic range for the condition that warfarin was given. An INR is also indicated in patients with liver disease
Diabetes mellitus	A finger-prick blood sugar is sufficient
Known haematological problems	Perform a full blood count if there is a history of anaemia (especially in the presence of cardio-respiratory disease), leukaemia, low platelet count or significant dyspnoea
Renal failure	Urea and electrolytes
Pacemaker or significant arrhythmias	Urea and electrolytes

OPHTHALMIC HISTORY AND EXAMINATION

A three-step approach is useful on the day of operation to assess the eye, identify high-risk cases (in other words, those at greater risk of damage because of the block) and potentially problem eyes, and plan the appropriate anaesthetic.

ESSENTIAL FIRST CHECKS

Confirm that you are assessing the correct patient, review general health (including any bleeding diatheses, for example, anti-coagulants, low platelet count) and verify which eye is to be operated on from the case notes. **It is important to note that some patients are not sure, especially if both eyes are diseased, and some change their mind after they have been listed for operation in the clinic**.

Follow the National Patient Safety Agency guidelines for marking the operation site, as there have been reports of the wrong eye being blocked. Then, note any previous ophthalmic procedures, the anaesthetic techniques used and their effectiveness, and any problems or complications that arose. Also, enquire whether the patient was happy with the technique used. For example, the needle prick felt when some anaesthetists perform a block by the transcutaneous route distresses some patients but it is easily preventable.

Check the axial length (normal is approximately 23mm). This is the distance between the cornea and the retina directly behind it, not the length of the globe. It is used by the surgeon to calculate the power of the lens to be implanted and is measured using either an ultrasound probe placed on the anaesthetised cornea, or by partial coherence interferometry, a laser Doppler technique. If biometry is unavailable, expect a long eye (axial length 26mm) if the patient has been myopic since childhood. Such eyes may have a staphyloma, an out-pouching of the globe resulting from pathological thinning of the sclera, choroid and retina. This usually occurs inferior to the posterior pole but can be at the equator. The incidence of staphyloma increases from about 15% of eyes with an axial length 27mm to 29mm to about 60% with an axial length >31mm. They may be unilateral or bilateral. Needle damage to the globe is about 30 times more common if the block is administered via the infero-temporal approach[4]. Blocks done at the medial canthus[5] or sub-Tenon's are safe.

IDENTIFY OPHTHALMIC CONDITIONS THAT HAVE SPECIAL REQUIREMENTS OR FEATURES THAT NECESSITATE EXTRA CARE WITH THE ANAESTHETIC

It is unwise to place large volumes of local anaesthetic in the orbit if there is a history of raised intra-ocular pressure, especially if this is not well controlled. A sub-Tenon's block is potentially safer, as excess fluid can drain out of the conjunctival opening. If a toric lens is to be inserted for severe astigmatism, the surgeon will want to mark the axes on the cornea under topical anaesthesia with the patient sitting up, before the block is placed. In addition, identify operations that will take longer than an uncomplicated cataract extraction and those ocular features that increase the chances of the surgeon having difficulties **(Table 4)**. These have implications for the duration of surgery, the quality of the anaesthetic needed, and the length of time the patient will have to lie supine.

EXAMINE THE EYE AND ORBIT

Inspect the eye and orbit to identify those features that can make safe needle placement more difficult. These include a narrow palpebral fissure, a skin fold covering the medial canthus (for a medial peribulbar block), nystagmus and a restrictive squint (which keeps the eye fixed in one position, such as - for example - because of paralysis of a rectus muscle).

If the patient has only one eye, or only one effective eye, it is essential to avoid any technique with a risk of globe injury. If planning to do an infero-temporal approach, check the space between the orbit and the globe (Finger Index) at the lower outer corner of the orbit. The closer the two are together, the harder it will be to insert the needle atraumatically from this direction. Where the globe lies tightly against the orbital rim, consider an alternative block[6]. Identify enophthalmos by noting the position of the globe relative to the lateral wall of the orbit. There is an increased incidence of needle damage to the globe from the infero-temporal approach if it is set well back in the orbit.

TABLE 4. PROCEDURES TAKING LONGER THAN AN UNCOMPLICATED CATARACT EXTRACTION, AND CONDITIONS THAT INCREASE THE RISK OF INTRA-OPERATIVE SURGICAL COMPLICATIONS

- Glaucoma operations, for example trabeculectomy
- Limbal relaxing incisions (LRI) to reduce mild astigmatism
- Problem lenses, for example pseudoexfoliation (PXF), brunescent cataract, posterior pole cataract. These make phacoemulsification more difficult and have a higher incidence of surgical complications
- Some patients taking tamsulosin display the 'floppy iris syndrome', which causes problems dilating the pupil and difficulties performing phacoemulsification
- Exchange of an intra-ocular lens can be a short procedure, but there is an incidence of capsular tears
- Elective anterior vitrectomy
- Inexperienced/slow surgeon

IS GENERAL ANAESTHESIA MORE APPROPRIATE?

Patient factors:

The following patient factors may suggest that general anaesthesia is more appropriate:

- Previous adverse reaction or serious problem with a regional anaesthetic
- Patient preference is important. There is no published evidence of increased mortality with a general anaesthesia. However, there may be increased morbidity in patients with significant cardio-vascular or respiratory disease, and there is the possibility of post-operative confusion in older patients and post-operative nausea and vomiting
- Patients who cannot lie flat, either because of cardio-respiratory disease, or because of positioning problems. This is particularly important if a long operation is planned
- Patients who cannot lie still, for example those with a Parkinsonian tremor, poorly-controlled epilepsy, or unpredictable cough not controlled by light sedation
- Deafness (unless the patient can communicate very well)
- Unco-operative patients, especially those with confusion or dementia
- Children

High-risk eye

An absolute indication for general anaesthesia is patients who have undergone previous surgery for retinal detachment or choroidal melanoma, unless the operation can be done under topical anaesthesia. After retinal detachment surgery, the globe shape will be altered significantly if an encircling band has been attached. It is therefore impossible to know where

an infero-temporal needle is in relation to the globe. Sub-Tenon's is also not an option in these cases because of the band. Previous surgery for some intra-ocular melanomas can leave the sclera very thin. A needle and some sub-Tenon's cannulae could easily puncture this.

Infection around the eye is also a contra-indication to regional block, though it is unlikely that the surgeon will wish to proceed with an intra-ocular operation in the presence of infection. Possible indications for general anaesthesia include high intra-ocular pressure (all regional techniques can raise intra-ocular pressure because of the volume of injectate); only one eye, or effective eye; operations where the eye will be 'open' (for example, phacotrabeculectomy), possibility of staphyloma, and a raised INR. Although the surgery can proceed in the presence of a raised INR, any bleeding will be more difficult to control in an anti-coagulated patient and it would be wiser to avoid sharp needle blocks in these patients.

Plan the anaesthetic technique

Be aware of patient preferences and be prepared to discuss the options with the surgeon. Then decide on the most appropriate technique. It is wise to identify special arrangements before the patient arrives in theatre, such as the need for anxiolysis and/or a 'hand-holder', the need for extra pillows to help with positioning, the availability of nasal cannulae for patients on domiciliary oxygen.

Pre-operative instructions

The patient should take their normal medication pre-operatively, including Warfarin. NSAIDs have been shown not to increase the incidence of retrobulbar haemorrhage. It is acceptable for the patient to have a light breakfast or a midday snack before the operation.

INDICATIONS FOR POSTPONING SURGERY

Most ophthalmic cases that can be performed under regional anaesthesia are not urgent, and therefore surgery can be postponed until the patient's status is optimal. The commonest reason for postponing surgery is poor control of chronic disease. that is either life threatening or could compromise the success of the operation. Any such patient should be referred appropriately. Examples include exacerbation of COPD; poorly-controlled angina or within three months of a myocardial infarction; hypertension (rapidly reducing blood pressure immediately before surgery is not recommended); inappropriately low blood pressure (for example, excessive anti-hypertensive medication); tachycardia (for example, uncontrolled AF); bradycardia (for example, excessive b-blockade, previously undiagnosed complete heart block); decompensated cardiac failure; pacemaker failure or imminent check-up; inappropriately high INR; poorly controlled diabetes or epilepsy; and sepsis elsewhere (for example, leg ulcers infected with MRSA).

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STETHOSCOPES AND MOBILE PHONES IN THE HOSPITAL: What Are The Risks?

By Xana Jardine, MSc Nursing

INTRODUCTION

Patients, hospital staff, visitors and doctors are continuously exposed to pathogens in their hospital or healthcare environment. The hospital is a reservoir for pathogens that can cause any number of healthcare-associated infections. Patients and healthcare workers transmit disease by touching people, surfaces and objects like mobile phones and stethoscopes to name a few.

Mobile phones and computing tablets are used by all doctors, patients, visitors, nurses, physiotherapists and radiology staff in wards, intensive care units (ICU), neo-natal units, maternity and operating rooms throughout South Africa. Along with stethoscopes, these devices are thought to be a reservoir for virulent bacteria, viruses and fungi. A variety of research has been conducted trying to establish the role these devices can play in disease transmission.

One such study found that clinical medical students (who have patient contact) had significantly higher *S aureus* and *methicillin-resistant staphylococcus aureus* (MRSA) on their mobile phones than non-clinical students. Pathogens like *Acinetobacter spp., S. pneumoniae* and *P. aeruginosa* where cultured on their mobile phones.

Results from an observational study that looked at how often and how regularly stethoscopes where disinfected was even more alarming. In this study, stethoscopes were only disinfected in 18% of 400 observed interactions with patients. None of the stethoscopes where disinfected before examination of patients with open chest or abdominal wounds as is recommended by the Centers for Disease Control (CDC).

These results led the researcher to state that: "Stethoscope disinfection is grossly overlooked, possibly jeopardising patient safety, particularly in acute care interactions. Periodic stethoscope disinfection, although inconvenient, helps reduce bacterial contamination and may reduce healthcare-associated infections." Even more shocking was the revelation in the same study that hands were only cleaned before and after encounters 27 times (6.8%) but were not cleaned at all in 231 (58%) encounters.

It is reported that: "Most hospital-acquired infections are transmitted by direct contact with the caregivers' hands, as well as indirectly through objects in patient environments." Objects that are capable of colonising bacteria that can be transmitted by caregivers to patients other than cellphones, include textiles such as curtains or bedding, uniforms, ties, and stethoscopes.

In previous studies it has been noted that a uniform that is only replaced every other day will harbour more resistant bacteria than one replaced daily. In this particular study - conducted in Jerusalem - doctors' scrubs suits where sampled when they entered the operating room (some of whom had performed medical duties in wards and emergency rooms or had eaten lunch in the cafeteria). The conclusion stated that: "Surgeons' scrubs do not carry a high bacterial

and pathogen load, at least when scrub replacement is frequent (average of four hours)." It continued by saying: "Comparing these results to those of previous studies showing high contamination rates on uniforms of nurses and physicians working in various hospital departments, may strengthen the guidelines regarding wearing separate scrubs in operating areas and changing them frequently."

SO WHAT IS THE SOLUTION?

Without a doubt, the importance of hand hygiene can not be overlooked. Perhaps an extra step can be added to the Five Moments of Hand Hygiene protocol. This could include disinfection of devices using a simple, quick UVC disinfection process, while washing your hands.

The suggested process begins with cleaning devices and then exposing them to UVC disinfection while doing a hand wash. This could be performed on entry to a ward, ICU or operating room, before and after patient contact, and upon leaving a unit or ward. Standard detergent disinfection-based cleaning relies on an operator and as such is well known to be inadequate. A compelling reason to use UVC-based disinfection systems is that they can effectively destroy pathogens.

Making use of UV systems that are safe for electronic devices like mobile phones, tablets and equipment like stethoscopes could help reduce healthcare-associated infections. This can also prevent healthcare staff from taking these dangerous pathogens home to their family and community.

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This article was written by Xana Jardine, head of SafMed Education and Decontamination Clinical Specialist. It first appeared in SteriView Issue 1, 2019 and appears here courtesy of the author.

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