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## FEATURE

*Handwashing Practices:  
Implications for Nursing  
Students*



## FEATURE

*Cancer Related  
Fatigue and its impact on  
the Surgical Patient*



## FEATURE

*Clinical Practice:  
Rhythm Strip Series*



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# Chairperson's Letter

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**Fionuala O'Gorman**

Chairperson

Dear Colleagues

I wish to welcome you all to the 7th annual conference here in the South Court Hotel. This will be the first time the conference is being held in Limerick. I wish to thank the Limerick members Breda Needham, Breda Fitzlaffen for their

contribution. At last years conference we conducted a research project on hypothermia, the results of which will be presented at the Limerick conference and this project has also been accepted for publication in The American Operating Room Nurses Journal (AORN).

Another issue that I feel is relevant to us today is the topic of advocacy for nurses. Therefore our closing address will be directed towards advocating for our patients and ourselves as professional nurses. I feel this is very relevant in our current health care climate.

I look forward to meeting you all and your continued support as members of IARNA.

Sincerely

**Fionuala O' Gorman**

## Editorial

Dear Colleagues,

I hope that you find this edition of the journal enlightening. The focus in this edition is on issues which are important in the practice of all health care professionals in the surgical field.

We are delighted to welcome on board Brid O'Sullivan who is an experienced cardiovascular nurse. Brid will regale us with a series of publications on the interpretation of ECGs and Rhythm Strips. In addition Dawn Farrell writes that Anaesthetic and Recovery nurses acting as preceptors are in an optimal position to positively influence student hand hygiene practices. Patricia O'Regan also discusses the impact of cancer related fatigue on the patient journey.

I would also like to take this opportunity to welcome on board Aileen Burton who will act as Journal editor for the next edition of the journal; I hope that you will support Aileen by writing about your nursing research or practice development experiences for the journal.

Lastly, I anticipate that the conference in Limerick will be successful and will wet your appetite for more sharing of knowledge and ideas, which will be facilitated in Dublin in 2009.

**Professor Josephine Hegarty,**

PhD MSc RNT BSc RGN

# Handwashing Practices: Implications for Nursing Students

Editor's perspective

*Anaesthetic and recovery nurses acting as preceptors are in an optimal position to positively influence student hand hygiene practices. In addition patient wellbeing is contingent on nurse's optimal compliance with hand hygiene guidelines. Therefore this article is vital reading for all preceptors.*

More than a century has elapsed since a relationship between handwashing and hospital acquired infections has been identified (Burton, 2007). Yet, health care workers still fail to recognise this relationship in everyday practice. The hands of health care workers are deemed the primary mode of transmission of infection. Therefore the simple procedure of proper handwashing is fundamental to hand hygiene and is considered one of the single most important control measures for preventing the spread of hospital acquired infections (also known as nosocomial infections). The importance attached to handwashing and to the prevention and control of infection in hospital settings has become subject to a plethora of guidelines in the Irish healthcare system including SARI (2004) guidelines for hand hygiene in the Irish health care setting, Health Information and Quality Authority (2007) guidelines and the Centres for Disease Control and Prevention (2002) guidelines. However, despite the heightened emphasis on infection control, and exhaustive research identifying its merits in preventing hospital acquired infections, compliance with handwashing still remains unacceptably low. It is regrettable that compliance rates for handwashing have been found to be less than 40% (Hugonnet et al, 2002, Creedon, 2005).

All healthcare workers have a critical responsibility to comply with good hand

hygiene practices. In exercising this responsibility healthcare workers have obligations to be knowledgeable in the principles of handwashing and infection control. Numerous studies have been performed on healthcare workers' knowledge, attitudes and behaviours concerning handwashing and infection control to determine reasons for low compliance rates (Creedon, 2005, Creedon, 2006, Whitby et al., 2006a, Barrett and Randle, 2008). Qualified nurses have been sampled in many of these studies. Nurses are key healthcare workers in preventing the spread of infection due to their continuous contact with patients, and also they comprise the largest portion of the healthcare workforce. Although nursing students are directly involved in patient care during their undergraduate education, there has been little explicit discussion in the literature to date on the implications of handwashing practices for nursing students. This paper aims to provide an overview of some previous research that examined knowledge, attitudes and behaviours in relation to handwashing practices among nurses with particular consideration to implications for nursing students. First, an overview of the problem of hospital acquired infection is presented.

## The Problem of Hospital Acquired Infection

Hospital acquired infection (also known as nosocomial infection) is defined as "an infection acquired at least 72 hours after admission to the hospital" (Weller, 2000 p. 279). Nosocomial infections are widely recognised as common in hospital settings with the incidence of hospital acquired infections ranging from 6% to 32% (Creedon, 2005). These infections pose a

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- serious threat to all patients and affect nearly 10% of inpatients (Henderson and Villanueva, 2004). Multi drug resistant/notifiable pathogens associated with hospital acquired infection have detrimental effects for patients (Wills, 2006a). Hospital acquired infections are notorious for the manner in which they complicate the course of the primary illness, prolong hospital stay and cause substantial morbidity and mortality. In addition they result in economic burden and distress on patients and their families and the health sector. It is estimated that at least 20% of hospital acquired infection could be prevented (Harbarth et al., 2003) and handwashing is fundamental to this prevention.

### Influence of Knowledge of Handwashing Practices

Lack of knowledge is a factor that can have a negative effect on handwashing practices. Researchers that have examined knowledge of healthcare workers prior to implementing an intervention programme have reported deficits concerning quality of handwashing, hand cleansing and glove use indications, risks associated with non-compliance and existence of published guidelines (Hugonnet and Pittet, 2000, Creedon, 2006). Interventions implemented by these researchers included education and training classes emphasising compliance to published guidelines. In addition, intervention programmes included training in correct handwashing techniques, poster displays and feedback of hand hygiene rates and nosocomial infection rates. Higuera and Rangel-Frausto (2004) found that policy education and performance feedback led to improvements in healthcare workers compliance to handwashing practices, with rates increasing from 35.8% to 75.8%. However, these results are transient. Rosenthal et al. (2005) argued that reinforcement through long-term feedback intervention programmes are essential to sustain long-term improvements in compliance rates with handwashing. These findings concur with other intervention programmes and in addition reductions in nosocomial infections rates have been evident (Pittet et al., 2000).

A conclusion that can be drawn from previous studies therefore is that knowledge acquisition requires ongoing reinforcement and so there is a need to intensify educational programmes aimed

at teaching handwashing practices to qualified nurses. A challenge in this regard within the current health service climate of nurse shortages is to address the problem of clinical nurses finding it increasingly difficult to attend in service education sessions.

The implications for nursing students are such that knowledge acquisition of handwashing practices needs ongoing reinforcement throughout their undergraduate curriculum. Wills (2006b) identified the benefit of intensifying educational programmes on handwashing and microbiology in the curriculum. Thus, intensifying education will increase understanding and enhance motivation, ultimately bridging the theory-practice gap. Although there has been little research to date specific to nursing students, the findings of a recent Belgian study by Vandijck et al. (2007) on undergraduate nursing students' knowledge and perception of infection control were favourable. Nursing students were found to possess adequate knowledge in relation to handwashing and an increase in this knowledge was noted over their three year programme. However, the researchers cautioned about assumptions concerning the impact of knowledge on practice implying that adequate knowledge levels may not necessarily translate into proper handwashing procedures in clinical practices.

### Beliefs and Attitudes towards Handwashing Practices

Busy working conditions are recognised as a major problem in the health service today. Pittet et al. (2004) found that physicians perceived handwashing as a difficult task. Lack of time was another contributory factor found to impact on compliance, linking a higher demand for hand cleansing and heavy workload conditions with a lapse in handwashing compliance (Hugonnet and Pittet, 2000).

In contrast, Creedon (2005) and Wong and Tam (2005) found that nurses had a generally positive attitude towards handwashing guidelines, with the belief that compliance with handwashing guidelines has a positive outcome and that time was not a major issue. Similarly, in a study by Snow et al. (2006), nursing students reported high personal commitment and understanding of the necessity of handwashing. Despite this commitment and understanding,



compliance rates to handwashing still remain low. In addition, Lusardi, (2007) found that student nurses consciously acknowledged their personal responsibility in preventing the spread of infection. However, it is possible that students' positive values often change as they do not challenge the actions of qualified staff, this maybe due to a perceived lack of empowerment as a junior team member. This point was highlighted by Bradbury-Jones et al. (2007), in that nursing students reported a "lack of understanding" and a "lack of voice" as indicative of disempowerment resulting in deskilling and silent submission due to fear of reprisal. Student nurses wished to integrate into the multidisciplinary team and not trigger conflict resulting in detrimental effects such as poor evaluation of clinical placement.

Another barrier to appropriate compliance to handwashing practices is nurses' negative attitudes towards hand decontamination products such as alcohol rubs or water and detergents. The area of skin irritation and hand hygiene products has generated a great deal of research (Jungbauer et al., 2004, Picheansathian, 2004). It has been found that frequent washing with hand decontamination products can cause contact dermatitis, pruritus, mild skin lesions, dry and sore skin (Maury et al., 2000). Poor skin condition can, as a result, reduce compliance with handwashing guidelines (Creedon, 2005, Barrett and Randle, 2008). Creedon (2005) concluded that the issue surrounding healthcare workers' skin irritation needs to be tackled immediately.

### Behaviours in relation to handwashing

Lack of motivation among healthcare workers to comply with handwashing guidelines suggests that handwashing behaviour is a complex interaction of many factors with influences from biological characteristics, the environment, education and culture. Role modelling greatly influences handwashing practices in either positive or negative ways. Good practices demonstrated by role models can positively influence other healthcare workers' handwashing behaviours. This has important implications for nursing students who are typically allocated to qualified nurses as preceptors (sometimes

called mentors) who then act as role models during the course of placement experiences. Barrett and Randle (2008) found that nursing students reported other healthcare workers as positive role models for their handwashing practices. A study by Wong and Tam (2005) on a sample of medical students suggests that practices of handwashing are influenced by peer behaviour and clinical teachers who act as role models. Nursing students are also exposed to the practices of other professionals while on placement. According to the nursing behavioural model by Whitby et al. (2006b) senior administrators and doctors can have a positive influence on handwashing compliance of nurses.

In contrast, a lack of compliance among practitioners can negatively influence behaviours of junior colleagues. A study by Lankford et al. (2003) found that healthcare workers who work alongside more senior staff who did not comply with handwashing guidelines were also considerably less likely to wash their hands. Whitby et al. (2006a) also noted that senior nurses did not always influence junior nurses in positive ways. Similar negative behaviours were found by Hunt et al. (2005) who reported low compliance of first year clinical students, final year students and qualified doctors. Many medical students stated their reason for non-compliance as being "nobody else does it" (i.e. washes their hands) reflecting the negative influence of consultants and other role models. This suggests socialisation of students' negative behaviours in practice, which is a key factor in understanding infection prevention behaviour. Cohen viewed professional socialisation "to involve the internalisation of the values and norms of the group into the person's own behaviour and self-conceptions" (Cohen, 1981, cited by Brennan and McSherry, 2007 p. 42). Barrett and Randle (2008) also identified that student nurses need to fit into the nursing team and the fear of unacceptance and negative relationships with staff as a factor in detracting from handwashing compliance. These findings clearly suggest that handwashing practices are influenced by the practices of superiors.

Thus, nursing students may be exposed to both positive and negative behaviours in clinical practices through role modelling

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and socialisation. There is a need for heightened emphasis on positive handwashing behaviours by preceptors in clinical practice and reinforcement of best practice principles to optimise students' compliance with recommended guidelines. The experiences gained by nursing students during their undergraduate education needs to be translated into their professional practice as qualified nurses in ways that contribute to positive patient outcomes in terms of infection control.

Fostering good handwashing behaviours in nursing students are also vital since these students will inevitably become preceptors once qualified and therefore act as role models to nursing students. Longitudinal studies are needed however to identify how nursing students' handwashing experiences and behaviours during undergraduate education translate into their practices as qualified nurses.

## Conclusion

In conclusion, poor compliance to good handwashing practices is a world wide public health problem. Infrequent and poorly performed handwashing practices by nurses and healthcare staff that are most frequently in continuous contact with patients is an ongoing concern for patient safety. In essence, failure of healthcare workers to comply with handwashing reflects negative attitudes, beliefs and behaviours. More research needs to be performed on nursing students to establish what detracts them from good handwashing practices. Multilevel and multifactorial educational and motivational programmes tailored to specific groups are needed to enhance leadership in order to empower nurses. Consideration to how nursing students can be socialised into positive handwashing practices in clinical practice is also an important step in the right direction.



# Hospital profile: Mid-Western Regional Hospital Complex, Limerick



**Professor  
Dominic Harmon**

Limerick's Mid-Western Regional Hospital Complex which includes the Dooradoyle Hospital site, St Nessian's Croom Orthopaedic Hospital and St Munchin's Obstetric Hospital. The Mid-West HSE Hospital network also includes St John's Hospital, Ennis General and Nenagh General Hospital. There are currently 15 consultants and 16 trainees in the Department of Anaesthesia, Intensive Care and Pain Medicine in the Mid-Western Regional Hospital complex. The network of hospitals is currently undergoing a reorganisation of services that offers both challenges and opportunities for the acute hospital service in the region.

A historical perspective: The Mid-Western Regional Hospital, Limerick was built in 1955 with an original bed complement of 276. The site comprised of 28 acres in Dooradoyle, on the road to Cork. Over the next 40 years many developments took place. During the 1980's advances in technology meant that several areas of the existing hospital building were modified and converted to new uses and a number of extensions added. In December 1995 approval was granted for the redevelopment of the existing regional hospital into a state-of-the-art modern facility with the full range of treatment, diagnostic, medical, social and general services departments and the staff facilities required to service the out-patient and in-patient needs of the catchment areas population.

The hospital complex has been linked with University College Cork Medical School for over forty years. In what was a great development for the region, University of Limerick Medical School was established in 2007. It will have an annual intake of 132 Irish medical students in 2010. It is the first "graduate entry" medical school in Ireland.

In addition the Department of Nursing and Midwifery spearheads the education of nurses in the region under the leadership of Bernie Quillinan (Head of Department). The school has an annual intake of approximately 150 undergraduate student nurses and midwives.

Professor Harmon is adjunct Professor of Anaesthesia and Pain Medicine in University of Limerick. He was appointed in 2006. His main clinical and research interests include Pain Medicine and the use of Ultrasound in the perioperative period.

A special thank you on behalf of IARNA to Professor Harmon for his assistance with the organisation of the annual IARNA conference in Limerick.



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# Cancer Related Fatigue and its impact on the Surgical Patient

## Introduction

Cancer represents a significant burden to society and the healthcare system; in human terms for patients and their families, and in terms of the resources consumed in the diagnosis, treatment and management of the disease (Redaelli et al, 2003). Many people with cancer undergo surgery for diagnosis, treatment or palliation. Fatigue is a common symptom that accompanies surgery, chemotherapy, radiation therapy, and biologic response modifying therapy. Cancer related fatigue is the key side effect reported both in the Irish context (Dillon and Kelly, 2003) and internationally (Maughan et al, 2002). Cancer patients have reported fatigue as the symptom that has the most negative impact on their quality of life compared with nausea, depression and pain - the symptoms ranked most highly by oncologists (O'Regan, 2008; Curt et al, 2000). Cancer patients who are undergoing surgery will potentially experience fatigue prior to their surgery as a result of their pre-existing disease, their physical or psychological conditions. Other factors specific to surgery that may exacerbate fatigue could include patient's preoperative conditions, the type and the extent of their surgery, the anaesthetics involved in the surgery, pain and the use of opioid analgesia to reduce their post operative pain. Post operative fatigue is an important issue following major surgery as it significantly delays patient recovery. According to Hall and Salmon (2002), postoperative fatigue occurs as long as 90 days after major abdominal surgery. Despite these harrowing statistics

it is something that receives minimum attention in clinical practice. Despite the frequency that cancer patients undergo surgical procedures, surgery tends to be the least explored treatment modality in relation to fatigue.

## Incidence of Fatigue

Fatigue is one of the most common unmanaged symptoms of cancer, occurring in 70% to 90% of cancer patients and in 80% to 100% of those receiving chemotherapy (Maughan et al., 2003). Ahlberg et al (2003) who identified fatigue being present in 70% - 100% of patients having cancer treatments, state that fatigue is more distressing and disruptive to daily activities than the pain associated with the disease. According to Miaskowski (1999), fatigue exists in 78% - 96% of people with cancer and of these 12% of patients reported that they wanted to die due to the severity of the symptom, while 80% of oncologists also believed it is a symptom that is overlooked and under treated in clinical practice. According to Otto (2001) the majority of patients with cancer, recovering from surgery consistently report fatigue which persists for up to 6 months. DeCherney et al (2002) concur and state that 74% of patients experienced moderate-to-severe fatigue within the first few weeks after surgery. Post surgery, fatigue has a substantial adverse impact on patient well-being and quality of life, as well as negatively impacting on their recovery and surgery satisfaction rates (DeCherney et al, 2002).

## Causes of Fatigue

The causes of cancer related fatigue are not fully known or understood. However, fatigue in cancer patients may have a variety of potential causes which include pre existing conditions, direct effects of cancer treatment and the psychological and social demands of dealing with cancer. It is not entirely clear how these factors interact to produce or exacerbate fatigue. A variety of factors are believed to contribute to fatigue, including the cancer treatment, the low level of red blood cells (haemoglobin), sleep disruption, stress, poor nutrition, inactivity and medication (Richardson et al, 1998; Godino et al, 2006). The literature highlights an overlap between fatigue and problems of psychological distress, reduced functional ability and pain (Curt et al, 2000). Additionally, cachexia - weight loss is present in half the patients at diagnosis and two thirds of patients with advanced cancer which again will precipitate fatigue (Otto, 2001). Piper et al (1987) proposed a fatigue framework that encompasses biochemical, physiologic, and behavioural factors that cause manifestations of fatigue. These factors are modified by the perception of fatigue. Thirteen patterns are outlined as having an influence on fatigue:

- Accumulation of metabolites,
- Changes in energy and energy substrate,
- Activity and rest patterns,
- Sleep and wake patterns,
- Disease patterns,
- Treatment patterns,
- Symptom patterns,
- Psychological issues,
- Blood oxygenation patterns,
- Changes in regulation
- Transmission patterns,
- Environmental factors
- Life events,
- Social factors
- Unique circadian rhythm.

Potential causes of fatigue specifically due to surgery include: increased cardiac effort, use of anaesthetics, route of administration of analgesia, alteration in nutrition, decreased physical activity and use of a variety of treatment methods (Otto, 2001). Potential common factors that can contribute to fatigue post surgery include anaemia, pain, anxiety/depression (DeCherney et al, 2002) should be

assessed, evaluated and treated accordingly.

## Impact of Fatigue in the Clinical Setting

Surgery has several applications in cancer management and treatment and is often the initial and preferred treatment of choice for many cancers (O'Regan, 2008). Surgery is frequently utilised in the diagnosis and staging of cancer disease including its treatment, reconstruction, prevention of disease and insertion of therapeutic / supportive medical devices. Despite certain limitations, surgery continues to be a very important treatment modality for cancer. By combining surgery with other treatments such as chemotherapy and radiotherapy, mortality rates and disease free interval rates have increased significantly (Otto, 2001). However with this increase in treatment interventions the incidence of fatigue has subsequently increased. There is considerable evidence stating that the occurrence of fatigue after surgery may be especially compounded when adjuvant chemotherapy and radiotherapy prior to or immediately following surgery are used (Corner and Bailey, 2001). According to De Cherney et al (2002) 74% of patients experienced moderate-to-severe fatigue within the first few weeks after surgery, occurring more frequently and persisting twice as long as pain. Fatigue was also indicated as the symptom that most interfered with daily activities, leading to depression, inability in concentrating and feelings of frustration in a considerable number of post operative patients. Overall, it should be considered that fatigue has a significant negative impact on patients' quality of life as they become too tired to fully participate in, and enjoy the roles and activities that make life meaningful (Donovan and Ward, 2005). Kehlet and Dahl (2003) outline the pathogenesis of early postoperative fatigue to include sleep disturbances induced by cytokines and opioids, while fatigue that persists for up to several weeks depends on loss of muscle tissue and function, cardiovascular response to exercise, as well as level of preoperative fatigue. Surgery may also immobilise patients because they may become generally unwell, experience pain, or may be attached to drains or infusions. This could potentially lead to a cycle of inactivity and fatigue. In addition,

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according to Mc Guire et al (2003) and Aarons et al (1996), those patients with a significantly higher level of preoperative fatigue prior to major surgery also appeared to be those who were more likely to be in a subjectively worse emotional and physical state post surgery. Many patients may also become malnourished and anaemic while experiencing chronic fatigue post operatively which again will impact on both their fatigue levels and post operative recovery. Fatigue in cancer patients undergoing surgery can thus last for weeks or months, and may be further exacerbated by anxiety as patients prepare for surgery. Pain after surgery, the effects of anaesthesia, sedatives, or analgesics may also cause fatigue. Kehlet and Dahl (2003) recommend a number of strategies that can reduce postoperative fatigue; these include a combined anaesthetic and surgical effort to reduce inflammatory responses (minimally invasive surgery, steroids, and opioid-reduced anaesthesia and analgesia) as well as techniques to reduce catabolism (regional anaesthetic techniques, dynamic pain relief, and early oral nutrition and mobilisation). According to Winningham et al (1994), despite the high incidence of postoperative fatigue observed in clinical practice, little research exists that examines causes and correlates of postoperative fatigue in people with cancer. Post operative fatigue is often overlooked as a factor of recovery despite it being a major problem following surgery (Zargar – Shostari et al, 2008). Fatigue should be considered a major issue for all patients preoperatively and routinely assessed for. Mc Guire et al (2003) and Pick et al (1994) highlight that at 30 days post operatively fatigue was highest in those patients whose noradrenalin levels were the greatest. However, what is apparent is that while fatigue is a problem following surgery it improves with time but is compounded by fatigue experienced from other cancer treatments (Winningham and Barton –Burke, 2000).

## Nursing Implications

For many people diagnosed with cancer and undergoing surgery, fatigue may become a critical issue in their lives. Fatigue may influence patient's sense of well-being, daily performance, activities of daily living, relationships with family and friends, and compliance with treatment (Pickard-Holley, 1991; Glaus, 1993; Given et al, 2002). Fatigue is regarded as one of the most distressing symptom that people with cancer develop and has major implications for their lives (Wu and Mc Sweeney, 2006), The experience of surgery for the treatment of cancer is different for each individual. All patients should receive thorough information pre surgery including the likelihood of developing fatigue. Reid (1998) who outline the vulnerability of the surgical patient, state that it is crucial that peri-operative nurses acknowledge the deficit of patients knowledge and redress this balance by providing continuous information. Peri-operative nursing information giving promotes optimum well being, preparation for and coping with surgery by empowering patients with knowledge such as pain control and the likelihood of experiencing potential symptoms such as fatigue. Effective patient education ensures that patients have the necessary information to participate effectively in care, and to adjust to the reality of their illness and its treatment. When patients have the necessary education and knowledge, it is likely they will be more able to take appropriate actions to manage the symptom successfully, and will feel less distressed by its occurrence. In order to effectively support cancer patients who are experiencing fatigue and plan appropriate intervention strategies, assessment is vital. Paying attention to the patients own descriptions can help health care providers better understand fatigue from the individuals own perspective and communicate better. Understanding fatigue and consequently the most appropriate management strategies should be a clear priority for those caring for patients with cancer (Miller et al, 2006).

# Clinical Practice: Rhythm Strip Series

Many perioperative nurses monitor patients' cardiac rhythms. Brid O'Sullivan presents a rhythm strip for you to review and analyse, as the first part of our series on ECG and rhythm strips analysis.

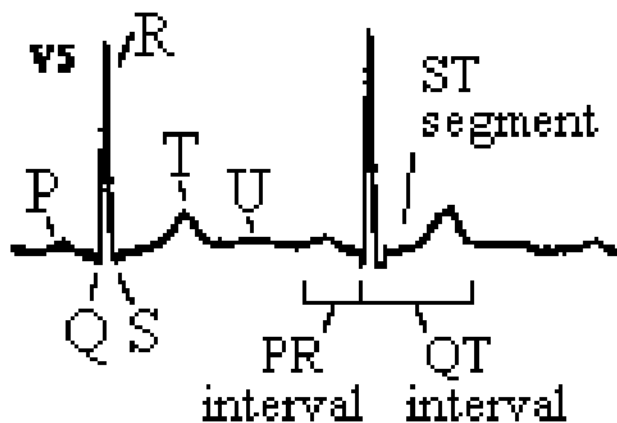


Figure 1: This figure represents a normal PQRST complex.

## Case Presentation

This rhythm strip was recorded from "Jeremiah" a 74 year old farmer, during a routine left inguinal hernia repair under general anaesthetic. This man's blood pressure at the time of this strip was 128/74; temperature 36.5° pulse 70, respirations; 14 per minute, and pulse oximetry measurement 97%. He was physically well prior to admission with no specific cardiac history.

## What does this rhythm strip show?

### 1. What is the heart rate?

Look at the ECG paper. Count out 30 large boxes. Now note the number of QRS complexes within the 30 boxes and multiply by 10 to get the rate per minute. This method is effective for both regular and irregular rhythms

**Why?** Because on standard 25mm/second ECG paper, each tiny box is equal to 0.04 of a second in time.

There are five tiny 0.04 boxes in one large square box, therefore  $5 \times 0.04 = 0.20$  seconds = 1x large box  
Thirty of these large boxes:  $30 \times 0.2 = 6.0$  seconds  $\times 10 = 60$  seconds or 1 minute.

**Voltage?** Represents the height or amplitude of the waves. Vertically, there are five tiny boxes in a large square and each tiny box represents 1mm height.  
 $5 \times 1\text{mm squares} = 5 \text{ mm or } 0.5 \text{ mV}$

### 2. What is the rhythm?

Are P waves evident?  
Is there a P before every QRS and a QRS after every P?  
Are the P-R intervals regular or irregular?  
Are the QRS complexes regular or irregular?  
Are the QRS complexes wide or narrow?

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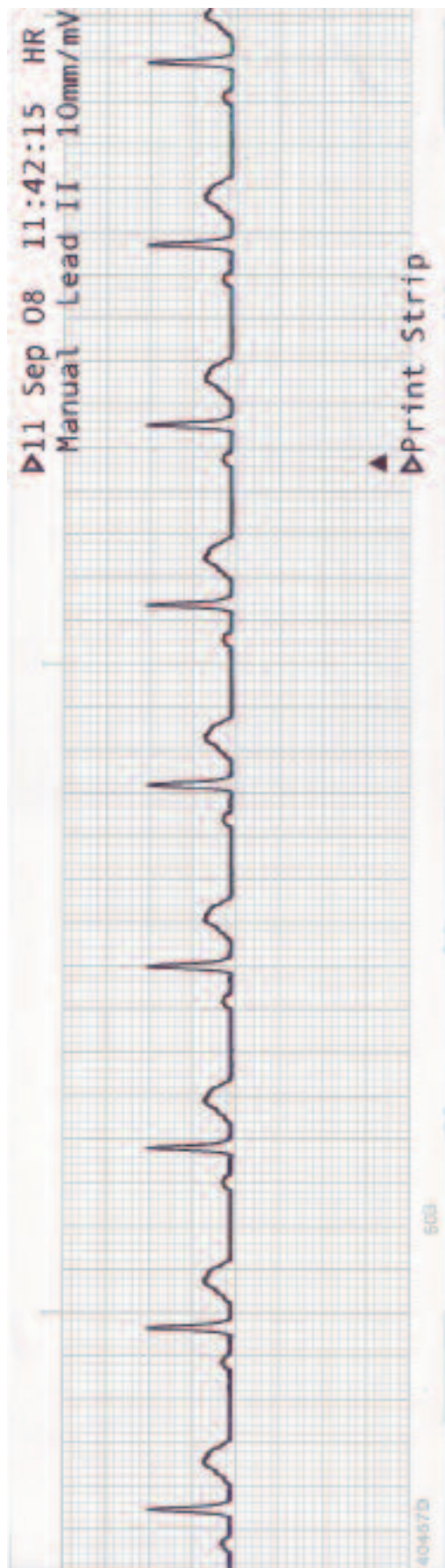
### 3. Review the ECG complexes, Intervals and Waves

Normal Measurements	Waveform	This ECG strip
P waves	Represents atrial depolarisation. Should be upright. 2.5 mm or less in height. Less than 0.11 of a second duration	Amplitude = 1mm 0.8mm duration
Q waves	First downward deflection from baseline. Should not be deeper than 25% of the following R wave	Present. Normal.
R wave	First upward deflection, after Q. The Q wave may or may not be visible.	Present. Normal.
PR interval	This checks the impulse speed from SA to AV node. It is measured from the start of the P, to the first downward deflection of the Q wave. Normal range = 0.12 - 0.20 seconds	PR interval = $4 \times 0.4 = 0.16$
The QRS complex	Represents conduction through the ventricles- which causes ventricular contraction. Normal range = 0.04 - 0.10 seconds	QRS = 0.8 seconds (3rd complex)
The QT interval	Measures duration and recovery of ventricular activity. Assessed from the start of the QRS to the end of the T wave. Affected by heart rate. Normal range = 0.35 - 0.45 seconds	QT = $9 \times 0.04 = 0.36$
The ST segment	Evident at the end of the QRS to the start of the T wave. Should be level with the isoelectric line.	Isoelectric. No ST elevation/depression.
The T waves	Should be upright, not taller than 5mm in limb leads, or 10mm in chest leads.	Upright and normal in lead II
The U waves	May be evident after the T wave and is estimated to be around 10% amplitude of the T wave, most evident in V2-V4,	Not evident in lead II.

**Answer: Normal sinus rhythm, rate 70 per minute**



Figure 2: Rhythm Strip



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# 27th National Conference of the American Society of PeriAnaesthesia Nurses (ASPAN)



Texas USA May 4-8th 2008.

*'Be the Voice: Advocacy Through Education, Practice, Research and Legislative Involvement'.*

The 27th Conference of the American Society of PeriAnaesthesia Nurses was held in Grapevine, Texas, approximately 40 km by road from Dallas. The Lone Star State was host to a Conference that brought nurses from the other 49 States. Indeed, there was good representation from Ireland sometimes known colloquially as the 51st State. The overall aim of the conference was to underline the necessity of advocacy in patient care; the objective of the conference was to place the nurse at the centre stage of education, practice, research and legislation. In her opening address, Suzanne Gordon, a journalist, lecturer and visiting professor told a two thousand strong audience of the urgent need for nurses to make the difficult transition from 'silence to voice'. She described the implications of 'nursing's invisibility' on public healthcare explaining why the public needs to know about nursing. Whilst Gordon's keynote address was hard-hitting in places, it was invigorating to the point that it brought life back into the voice of nursing advocacy.

The ASPAN Conference took place over four days of concurrent sessions that covered a wide ranging programme of the many diverse elements of peri-operative practice; from Infection Control to asthma and airway disease, from compartment syndromes to post operative neurological complications, from family visitation in PACU to care of the peri-anaesthesia patient. The increasing problem of obesity in peri-operative practice was addressed in its many forms in the conference that confirmed it as a national epidemic in the USA. We were welcomed very warmly by our American hosts to the ASPAN Conference, some of whom will be travelling to Ireland to speak at the 7th National IARNA Conference in Limerick on Saturday October 18th. We look forward to extending a very warm welcome to our American colleagues to Ireland

Abridged presentations from the 27th National ASPAN Conference can be accessed on the IARNA Website in the coming weeks: [www.iarna.ie](http://www.iarna.ie)



# About the Journal

## Irish Journal of Anaesthetic & Recovery Nursing

### JOURNAL DESCRIPTION

The Journal is published on a quarterly basis and provides articles, reviews, letters and discussion on key topics, which are pertinent to the perianaesthesia nurse. Topics include updates on clinical issues, perianaesthesia nursing care, research on perianaesthesia nursing care, legislation and the practice of the perianaesthesia nurse. Other features include updates on practical innovations, book reviews, conference reports and education supplements.

### AUTHOR GUIDELINES

The Irish Journal of Anaesthetic & Recovery Nursing welcomes manuscripts pertaining to nursing practice in the areas of Anaesthesia and Recovery. The Journal endeavours to publish information on current trends in the provision of optimum health care. Manuscripts (which examine an area of clinical practice, details the author's research or discusses practical innovations), short-case studies, papers expressing professional opinions or letters are welcome from all members of the multidisciplinary team.

### EDITORIAL AND PEER REVIEW POLICY

Manuscripts are evaluated by the Editor and two members of the IJARN Editorial Board. While the Editor may modify the style of a contribution, major changes will be reviewed by the author prior to publication.

### MANUSCRIPT PREPARATION

Submit three copies of the manuscript (on paper) and one copy on a disc (Microsoft Word document). Discs and paper copies of the manuscript will not be returned to the author. The manuscript must be double spaced, wide margin (3.17 cm left and right margins and 2.54 for top and bottom) and should be typed on one side of the paper only. The word count should be up to 2000 words (consult Editor for specific advice). The top sheet should display: paper title, author's names, professional and academic qualifications, positions and place of work

and address to which all correspondence should be sent. Figures, legends, tables, pictures (submitted on a separate page) should be referred to in the text and their appropriate position referred to in the margin. The main text should be preceded by a short summary (100-200 words).

In the case of research carried out by the authors, it is assumed that the authors have conformed to the normal ethical aspects of the investigation and appropriate copyright laws.

References in the text should cite the author's names followed by the date of publication, in date order e.g. (Murphy 1990, McCarthy 1998 and Lennox 1999). Where there are three or more authors, the first author's name is followed by et al (O'Sullivan et al 1999), all author's names are included in the reference list. Text taken directly from another article i.e. a direct quote should be referenced with the page number (Ryan 2001 p. 29). A detailed list of references should be included as a separate page which include author's surnames and initials, year of publication, title of paper, name of journal, volume number (and issue number where relevant) and first and last page numbers.

For a book citation include the author's surnames and initials, year of publication, title of book, (edition of book if appropriate) followed by the publisher and town country/state of the publisher.

When referencing a chapter in a book, details of the author and editor are given as well.

For further details or to submit an article please contact Aileen Burton by email at [a.burton@ucc.ie](mailto:a.burton@ucc.ie)

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*L to R  
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*Committee members of  
the British Anaesthetic  
and Recovery Nursing  
Association (BARNA) with  
Fionuala O'Gorman and  
Grainne McPolin IARNA  
attending the annual  
conference of BARNA in  
June.*



*The IARNA committee would like to  
congratulate Josephine Hegarty on her  
appointment as Associate Professor of Nursing  
at the Catherine McAuley School of Nursing  
and Midwifery, University College Cork.*



*Jan Odom-Forren ASPAN at the Launch of  
her book: 'Peri-Anaesthesia Nursing:  
A Critical Care Approach at the  
ASPAN Conference in Texas*



*Jessica Inch, Editor BJARN, Pat Smedley,  
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