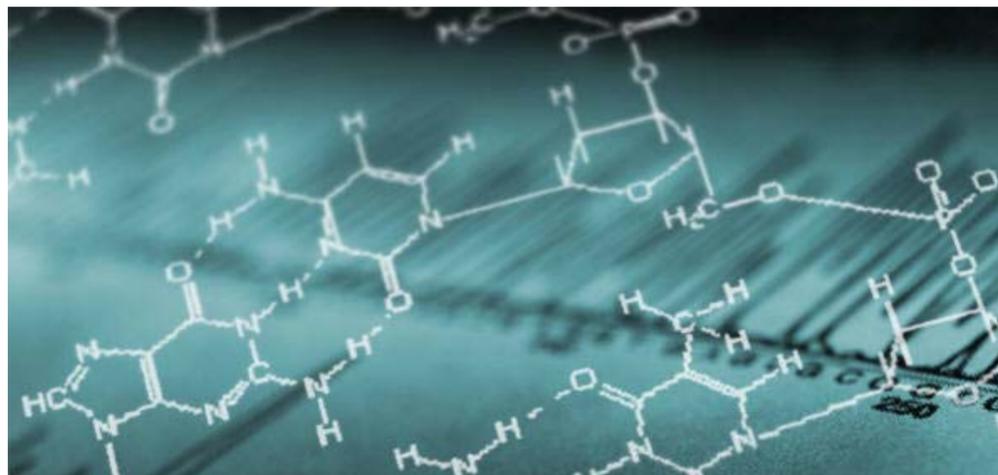


# 11<sup>th</sup> Annual Research Conference



## Conference Booklet

Friday November 26<sup>th</sup> 2010

Research & Education Centre  
Sligo General Hospital



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The conference has been approved for

- 3.5 CPD Points by Royal College of Surgeons of Ireland
- Post-registration Category 1 by An Bord Altranais
- 5 CPEP Point by Academy of Medical Laboratory Sciences

# Chairman's Welcome

I am delighted to extend a warm welcome to you all to the 11<sup>th</sup> Annual Research Conference of the Research and Education Foundation at Sligo General Hospital.

The programme, as ever, is an exemplary mix of clinical and scientific excellence with a distinct focus on celebrating research and researchers from this area. You will see from this programme that our speakers range from internationally renowned researchers to those starting out on their research careers; dipping their research toes in the water for the first time. There are many excellent poster presentations and I congratulate everyone who is involved. This year, we have a stronger focus on oral presentations of research undertaken in the North West Region. Unfortunately, we could not invite everyone to give an oral presentation. Therefore, I encourage you all to spend some time reviewing the posters.

The kind and generous sponsorship of our sponsors Merck Sharp & Dohme, Bristol Myers Squibb and AstraZeneca and the support of Sligo General Hospital make this event possible and for this we are grateful. I would like, also, to thank the small group of individuals who have given so unselfishly of their time and expertise to create this event.

**Dr. John Williams**

Chairman  
Research Advisory Committee  
Research & Education Foundation  
Sligo General Hospital

# Programme

Conference Chairperson: Dr. John Williams

- 9.00 am           **Opening Address**  
*Mr. Gerry McManus, Chairman, Research & Education Foundation*
- 9.15 am           Presentations of Local Research Projects:  
**'Keeping Connected in Care': Social networks of young people in long-term foster care**  
*Dr. Conor McMahon, Children's Services, HSE W*  
**Supporting Smoking Cessation in Pregnancy**  
*Pauline Kent, Smoking Cessation Officer, SGH*  
**Epidemiology of Facial Injuries in the West of Ireland**  
*Sinead Byrne, Medical Student at SGH*  
**Arylseterase/Paraoxonase Polymorphism in an Irish Cohort**  
*Dr. Gani Adebayo, Medical Dept, SGH*  
**Cardiovascular Profiling in Chronic Kidney Disease in the NW Region**  
*Dr. E Ishag, Renal Dept, SGH*  
**An Exploration of Telephone Coaching in Type 2 Diabetes**  
*Helen McGloin, St. Angela's College, NUIG*  
**Effects of Atorvastatin on Nocturnal Sleep & Atorvastatin Prescribing Trends**  
*Dr. S Bilal, SpR, Medical Dept, SGH*  
**Can the Clock Drawing Test Replace the Mini Mental State Examination for Cognitive Assessment in Primary Care?**  
*Dr. Adam Abba-Aji, Old Age Psychiatry, SMHS, HSE W*
- 11.15 am           **Coffee break and Poster Viewing**
- 11.45 am           *Keynote Talk I:*  
**Type 2 diabetes in young adults: Underlying mechanisms and clinical implications**  
*Prof. John Nolan, Consultant in Endocrinology & Metabolism, St. James's Hospital, Dublin*
- 12.30 pm           *Keynote Talk II:*  
**Genome research in mental health: A real vision for change**  
*Prof. Aiden Corvin, Head of the Psychosis Research Group, TCD*
- 1.15 pm           **Closing Address**  
*Dr. Peter Wright, Director of Public Health Department, HSE W*
- 1.30 pm           **Close**

*Posters will be on display on level 6 at Sligo General Hospital from November 26<sup>th</sup> – December 6<sup>th</sup> 2010*

## **Key Note Speakers:**

### **Prof Aiden Corvin**

‘Prof. Aiden Corvin heads the Psychosis Research Group at Trinity College Dublin (<http://www.medicine.tcd.ie/neuropsychiatric-genetics/psychosis/>). The goal of his work is to identify and understand the molecular mechanisms that underlie major mental illnesses, including schizophrenia and bipolar disorder. The group is highly multidisciplinary and includes clinicians, psychologists, brain imagers, geneticists, molecular biologists and biostatisticians. Over the last decade they have identified a number of genes and pathways critical to these disorders and are investigating how these genes affect function. Prof. Corvin has published more than 70 peer-reviewed papers in journals including Nature, Nature Genetics and Archives of General Psychiatry. His work is funded by Science Foundation Ireland, the National Institute of Mental Health (NIMH-US) and the Wellcome Trust. ‘

### **Prof. John J Nolan**

John Nolan is currently Associate Professor of Endocrinology and Biochemistry (since 2002) and Consultant in Endocrinology and Metabolism at St James’s Hospital (since 1996). He leads a cross-university diabetes research group within the new Dublin Centre for Clinical Research (DCCR), a partnership between Trinity College Dublin, University College Dublin and the Royal College of Surgeons in Ireland. His research focuses on the mechanisms and treatment of insulin resistance in Type 2 diabetes. He has published more than 100 papers with key discoveries in Diabetes, The Journal of Clinical Investigation, New England Journal of Medicine and Diabetes Care. He is the recipient of many awards and honours, and has been a state of the art lecturer at international scientific meetings. He has received diabetes-focused grants from the 5th and 6th Framework programmes of the European Union. He is a member of the Executive of the European Association for the Study of Diabetes (EASD) and is Chair of Postgraduate Education for the EASD, since 2006. He is a member of the American Diabetes Association and the Endocrine Society, and an Executive Member of the Association of Physicians of Great Britain and Ireland. He is on the Steering Committee of the EU DIAMAP project and chairs its section on clinical science and clinical care. He has recently been appointed Deputy Editor of the journal Diabetologia, and will serve in this position from 2010 to 2013.

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## Can the Clock Drawing Test Replace the Mini Mental State Examination for Cognitive Assessment in Primary Care?

Dr. Adam Abba-Aji, Dr. Clare Kelly, Monica Banks, Marguerite Cryan, Ann Gethin, Sue Kelly, Kevin McLaughlin, Clare McLaughlin, Gavin Sweeney, Joanne Tyrell, Dr. Geraldine McCarthy

*Department of Psychiatry of Old Age, Sligo Mental Health Service*

### *Introduction*

The prevalence of dementia is approximately 1.5 percent at age 65 years and doubles every 4 years, to reach approximately 30 percent by age 80 years<sup>1</sup>. Mini-Mental State Exam (MMSE) is a common screen tool for cognitive impairment.

Clock Drawing Test (CDT) involves comprehension, perception, memory and visuo-spatial. CDT can easily be administered in 3 minutes and it requires little training<sup>2</sup>. MMSE takes approximately 15 min to complete<sup>3</sup>. Thus reported to be time consuming by the primary care team and such could delay early identification of cognitive impairment<sup>2</sup>.

### *Aim*

To assess the validity and predictability of the CDT in comparison with the MMSE as a population screening tool for cognitive impairment.

### *Methodology*

This is a retrospective case study performed on 100 patients from a community-based sample age 65 and above. Demographic information of age, gender, educational background and diagnosis were assessed. We evaluated CDT, MMSE on all the samples. Data was analyzed using SPSS. CDT 0 and 2 indicate cognitive impairment and CDT 3 no cognitive impairment. MMSE scores less than or equal to 23 were taken to indicate cognitive impairment and 24 and above to indicate no cognitive impairment<sup>4</sup>.

### *Results*

69 women and 31 men with mean age 79 years. A total of 61 patients scored 24 and over on MMSE and 39 scored 23 or below. 58 scored 3 on CDT and 42 scored 0-2 points on CDT. The ability of a normal CDT (3) to predict an MMSE score of 24 or above was found to be 90% and CDT (2-0) to predict an MMSE score 23 or below was 71%. There is a heterogeneous distribution of levels of education.

### *Conclusion*

CDT is a quick and easily completed screening tool for detecting moderate/severe cognitive impairment in a community elderly population. Clock-drawing appears to be a practical test which can be useful for primary care team as a screen for cognitive impairment in old age and possibly as a marker of change in cognitive status.

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# Documentation of sensitivity/allergy status on the medication chart (kardex) of hospitalized adults in an Irish mental health service.

Dr. Adewale Raji, Dr. Donagh O'Neill

*Adult Mental Health Service Unit, Sligo Mental Health Services, Sligo.*

## *Introduction*

Allergic drug reactions (ADR) account for 5 to 10 percent of all adverse drug reactions<sup>1</sup>. Neuroleptics Malignant syndrome (NMS), though uncommon, is a life-threatening idiosyncratic reaction to neuroleptics<sup>2</sup>. Adverse drug events such as NMS and ADR result in substantial harm<sup>3</sup>. The sensitivity/allergy status is expected to be documented on the kardex so that it is visible at the point of prescribing, dispensing and administration (This should be done even when the patient has no known allergies)<sup>4</sup>. Failure to accurately document sensitivity/allergy status on the medication kardex can have preventable dire consequences.

## *Aim*

To evaluate the observance of documentation of sensitivity/allergy status on the medication kardex.

## *Methodology*

The medication prescription and administration charts (commonly referred to as 'kardex') of all the 40 patients on admission across the three admission units of the Sligo mental health service (50 licensed beds), were retrospectively checked on the same day in July 2010 for documentation of sensitivity/allergy status. The prospective component of the audit shall be undertaken in October 2010, following a discussion of the audit results at the clinical audit meetings, with the clinical nurse managers and the pharmacist.

## *Results*

On the day of the audit, the sensitivity/allergy status were documented on the kardex of 4 (22%) of the 18 patients in the male admission unit, 5 (33%) of the 15 patients in the female admission unit (FAU), and 3 (43%) of the 7 patients in the third inpatient unit (a psychiatric special care unit - SCU). One patient on the FAU and one male patient in the SCU had penicillin allergy documented on their kardex, while others with documented sensitivity/allergy status had no known drug allergy.

## *Conclusion*

These results suggest that 7 out of 10 inpatients did not have the sensitivity/allergy status documented on the kardex. An improvement on the current practice is hoped after discussing the audit results and recommendations with the members of staff involved with prescribing, dispensing and administration of medications.

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4. Department of Health. Building a safer NHS for patients; improving medication safety. London: The department; 2004

# **An audit of implementation of prescription guidelines in Sligo/Leitrim learning disability services**

Anthony Fakrogha<sup>1</sup>, Inam Ul-hag<sup>2</sup>, Donagh O'Neill<sup>1</sup>

1: Adult mental health service unit, Sligo mental health services, Sligo.

2: Learning disability unit, Sligo mental health services, Sligo.

## *Introduction*

Drug errors are the single most common cause of medical mistakes and quite a number of claims by patients are related to prescribing, monitoring and administration<sup>1</sup>. Important causes are lack of patient information, misinterpreted abbreviations. This is because majority of our kardex do not contain local policy guidelines. Hence prescribing error can cause patient harm.

## *Aims*

To assess the implementation of local prescription guidelines.

## *Methodology*

This study was carried out in two Irish learning disability hospitals they are Cregg and Cloonamahon hospitals comprising (136 and 59 bed hospitals respectively). A total of 33 kardexes for all the 33 patients on admission in both hospitals were reviewed on a day in June 2010.

## *Results*

From the above table, name of the patients, frequency, dose, signature of prescriber, start date for both hospitals were accurately documented in the kardexes (100%). 24 hour maximum dose of as necessary (prn) for both hospitals not documented (0%). Indication, block letters and frequency for prn medications are (91%), (45%), (91%) for Cloonamahon hospital (CLH) and in Cregg hospital (CH) these were not documented (0%). For patient details, date of birth, hospital number, and information on allergies were (100%), (9.1%), (13.6%) for CH and no documentation on this in CLH (0%). For prescribed medication generic name and block letters were (81%) for CLH and CH are (59%), (45%). Finally cancellations of medications not signed is 27% in CLH, while CH only had 82% signed.

## *Conclusion*

Drug errors can result in physical and mental distress to the service users. It can also be a cause of litigation in the health sector. It is hoped that with an improved prescribing kardex design; most of the errors highlighted above can be avoided.

## *References*

1. Audit on inpatient prescription writing guidelines. M. Kripalani, R. Badanapuram. Bell. Journal of Psychiatric and Mental Health Nursing, 2007, 14, 598–600

## Primary care prescribing of anti-osteoporotic type medications following hospitalisation for fractures

Bernie M. McGowan<sup>1</sup>, Kath Bennett<sup>1</sup>, Joe Marry<sup>2</sup>, JB Walsh<sup>2</sup>, Miriam C Casey<sup>2</sup>

1: Dept of Pharmacology & Therapeutics, Trinity Centre for Health Sciences, Dublin 8.

2: Osteoporosis and Bone Health Clinic, Medicine for the Elderly, St. James's Hospital, Dublin 8.

### *Introduction*

Despite the availability of proven effective pharmacotherapy for the management of osteoporosis, studies are continuing to show that post fracture treatment with anti-osteoporotic medications remains suboptimal. These findings are particularly relevant in light of the fact that a history of fracture is one of the strongest predictors of future osteoporosis related fractures.

### *Aims*

To examine prescribing of anti-osteoporotic medications pre and post hospital admission in patients with fragility fractures and to examine factors associated with prescribing of these treatments following admission.

### *Methodology*

We identified all patients aged 55 years and over admitted to St. James's hospital between 2005 and 2008 with a fracture using the Hospital In-Patient Enquiry (HIPE) system. These data were linked to prescribing data from the HSE- Primary Care Reimbursement Services scheme before and after discharge (n=821 patients). Logistic regression analysis was used to examine the likelihood of prescription of anti-osteoporotic medication pre and post discharge in relation to year of discharge, age, gender, and type of fracture.

### *Results*

Prescribing of anti-osteoporosis treatment before fracture increased from 2.6% (95% CI 2.23,2.93%) in 2005 to 10.6% (95% CI 9.32, 11.86.%) by 2008 while post fracture prescribing increased from 11% (95% CI 9.64,12.36%) to 47% (95% CI 43.6, 50.3%). Taking patients discharged from hospital in 2007, post fracture prescribing was 31.8% (95% CI 28.66, 35.02%) at 12 months, increasing to 50.3% (95% CI 46.6, 53.9%) at 24 months. The highest rate of prescribing was in the 65 – 69 year age group (OR =8.51, 95% CI 1.75- 41.35). Patients discharged in 2008 were eight times more likely to be treated than patients discharged in 2005 (OR =8.01, 95% CI 4.55-14.09).

### *Conclusion*

The proportion of patients on anti-osteoporotic treatment post fracture increased significantly from 2005 to 2008. This may be largely due to the introduction of an Osteoporosis Clinic to the hospital in 2005.

# **Gender differences in response to experimental pressure pain stimuli in the Irish population – a preliminary study**

Murray C<sup>1</sup>, Khan J<sup>2</sup>, O'Connor TC<sup>3</sup>

1: *Institute of Technology Sligo*; 2: *Medical School, NUIG*; 3: *Dept of Anaesthesia, SGH*

## *Introduction*

Although a growing body of evidence suggests that there are gender differences in pain threshold and tolerance in response to experimental pain stimuli<sup>1</sup>, no study to date has yet examined these modalities in the Irish population.

## *Aims*

This preliminary study tests the hypothesis that Irish males have a higher pressure pain threshold and tolerance than Irish females.

## *Methodology*

Fifteen Irish males and female students fitting inclusion/exclusion criteria were recruited. Controlled pressure stimuli were delivered by an algometer. The pressure stimulus was sequentially applied to the right trapezius muscle, right masseter muscle and ulnar aspect of the right forearm in each subject. After confirmation of normal sensory perception, pressure pain threshold was recorded by asking subjects to raise their left hand when they felt a change from non-painful to painful sensation. Pressure pain tolerance was then assessed by asking subjects to raise their left hand again when pain became intolerable. Results were analysed using Wilcoxon rank sum tests.

## *Results*

This preliminary study shows that Irish males have a significantly higher pressure pain threshold and tolerance than Irish females at all 3 sites assessed (see graphs).

## *Conclusions*

Although the population sample is small, the significant differences in these findings suggest that significant differences exist in pressure pain responses between genders in the Irish population. Further research to determine whether differences exist in other pain sensory modalities (cold, electrical, ischaemia) as well as in clinical pain has commenced. Greater understanding of the differences between male and female pain appreciation should lead to improvements in the clinical management of both acute and chronic pain.

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*The authors wish to acknowledge the following: Dr Tom Ryan, Consultant Anaesthetist, St James Hospital, for his assistance with stats*

## **Audit of Pain Clinic Activity, Sligo General Hospital, 2006-2010**

Dr. Cara Connolly, Dr. Terese O'Connor, Ms. Deirdre O'Gara

*Dept of Anaesthesia, Sligo General Hospital*

### *Introduction*

Established 6 years ago, Sligo Hospital Pain Clinic has been challenged by both increasing demand and catchment area, and has met this challenge by expanding its scope of practice to cover a 2 day clinic, theatre lists and in-patient care. Given the increasing demand on services we felt an audit would help us quantify our patient's needs and direct future developments.

### *Aims*

We will quantify this clinic's activity in terms of services offered and patient through put. We will look at recent developments in the clinic and their success. As inpatients are a growing part of our practice, we will also examine their referrals.

### *Methodology*

Retrospective data from 2006-2010 was collected and analysed.

### *Results*

Pain Clinic activity showed a universal increase among subgroups, with greatest increases occurring in the Inpatient subgroup. Analysis of pain clinic interventions showed trigger point injections to be the most commonly performed procedure. The greatest increase occurring in the Botox Injection subgroup. Inpatient data examined showed approximately equal referral rates between specialties.

### *Conclusion*

The data collected highlights a significantly increased level of care from 2006-2010, and directs to potential future developments. In our clinic the most common presenting complaint is musculoskeletal pain, and this is reflected by the frequency of trigger point injections performed. Interestingly, botox injections have increased sharply 2006-2010, reflecting the increase in stroke-referrals. This could direct future care with the inclusion of a Pain Service in the Stroke Rehabilitation Clinic. Analysis of inpatient data revealed that orthopaedic patients were often discharged from hospital soon after their pain review, suggesting pain may have been limiting their discharge. Oncology patients were noted to require a higher level of input. Given the need for more extensive care for these patients a future development could be the introduction of combined Pain/Palliative Care ward rounds.

# Addressing the Needs of Young People: A Broader View of Sexual Health

Caroline Forde

*Rape Crisis and Sexual Abuse Counselling Centre, Sligo, Leitrim and West Cavan*

## *Introduction*

To date, progress has been made nationally and internationally in relation to improving young people's access to health services and in the provision of information and advice regarding their sexual health, yet research<sup>1</sup> continues to highlight problems in this area.

## *Aims*

This study sought to explore how young people in the Northwest view and understand their sexual health, identify ways in which we can better address their sexual health needs and create a partnership with professionals and young people in order to realise the feasible ideas generated.

## *Methodology*

As qualitative action research, focus groups and semi-structured interviews were conducted with young people (14-21) and professionals who work with them in organisations that identify sexual health as a priority in their work. A purposive sampling strategy ensured diversity within the sample (n=40) and thematic analysis was used to analyse the results.

## *Results*

The findings indicate that sexual health continues to be a difficult area for both young people and parents, with a perceived lack of awareness and understanding associated with sexual violence in particular. Supporting the recognition of the need for information to be reinforced by self-esteem, personal development programmes were deemed essential by the majority of participants. As the commissioning body, a number of valuable insights into the perceived difficulties associated with young people accessing the services of the Sligo Rape Crisis and Sexual Abuse Counselling Centre were provided by several respondents.

## *Conclusion*

Broadening the concept of sexual health and partnership approaches recognised as essential to successful health promotion would enhance the knowledge of what is available to young people. This would ensure that valuable referrals can be made and organisations work more effectively both individually and collectively. Participative and creative approaches involving young people must be complementary to this approach and a number of recommendations are made.

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## **The Cycle of Change An Innovative Approach to Audit and In-Service Education**

Hannon, C.<sup>1</sup>, Carolan, E.<sup>1</sup>, Bree, K.<sup>1</sup>, McHale, I.<sup>1</sup>, Broderick, M.<sup>2</sup>, Oates, G.<sup>2</sup>, Cosgrove, L.<sup>2</sup>,  
Smyth, A.<sup>3</sup>, A., Ginnelly<sup>4</sup>, N.

*1: Nursing Practice Development Unit, SGH; 2: Pharmacy Department, SGH; 3: Department of Nutrition & Dietetics Hayes, SGH; 4: Nursing Management, Sligo General Hospital,*

### *Introduction*

In 2008, Sligo General Hospital developed 'Guidelines for the Insertion, Care & Management of Nasogastric Tubes (NGTs)' (CLN-GEN-016). The guidelines were due for review in 2010. Prior to this an audit of staff compliance to the guidelines was carried out by using a multi-choice questionnaire (MCQ) as an audit tool

### *Aim*

The purpose of the audit was:

- To assess staff compliance with the guidelines.
- To assess the need for any further educational sessions on the guidelines.

### *Methodology*

Six units took part in the initial audit. Twenty eight (28) MCQs were completed & returned out of a possible 40 (RR: 70%). The low scores indicated non-compliance with the guidelines. Documentation examination revealed that staff were not using the NGT insertion record, the Nutritional (NUT) screening tool, or the oral hygiene care chart appropriately, as set out in the guidelines. Staff feedback indicated a lack of knowledge regarding medication administration via NGT/enteral tubes.

A multidisciplinary education team was assembled and was split into 3 sub-teams. Unit-based education sessions on the identified topics with posters, props & practical demonstrations were undertaken by these sub-teams. In total, 87 nursing staff & healthcare assistants attended one or all of the sessions

### *Results*

To date the medical units/ICU have undergone re-audit. All scores have increased with many staff scoring 100% on all standards. Namely:

- Increased staff awareness regarding safe medication administration via enteral/NGT
- Increased use of ward references for medication administration via feeding tubes
- Increased use of 'troubleshooting guide' and pH-graded paper, as opposed to x-ray tube confirmation.

Many of these results have led to cost savings for the units.

### *Conclusion*

Results from re-audit indicate that staff knowledge & compliance with the guidelines has increased as a result of the multidisciplinary education sessions. The initiative served to highlight the challenges and merits of integrating audit with in-service education. This innovative approach focused on identified staff needs and has served to enhance patient care & safety

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# **Determination of the Rates of Absorption and Elimination of Alcohol in Women when Alcohol is Consumed in Combination with a Slim Line or Regular Mixer using the Alcohol Detector AL-6000.**

Claire McIntyre, John Williams

*Pathology Department, SGH*

## *Introduction*

It is recognised that women react more sensitively to alcohol than men<sup>1,2</sup> and there are many studies documenting the negative consequences. These include the risk of developing alcohol related diseases<sup>3,4,5</sup>. Other risks include those associated with the popular trend of binge drinking; such as hazardous driving, unsafe sexual behaviour, increased risk of sexual victimisation and falling behind in school or work.<sup>6,7,8,9</sup>

## *Aims*

This study aims to determine if the calorie content of the mixer with which alcohol is consumed has an effect on the rates of absorption and/or elimination of alcohol in women.

## *Methodology*

A total of 9 females who consume alcohol were recruited for the study. Each subject was required to consume 3 standard measures of alcohol in combination with the slim line or regular mixer on different days. Their blood alcohol concentration curves were constructed by measurement of blood alcohol concentration every 10 minutes over a 3 hour period using the Alcohol detector AL-6000 and results were statistically analysed.

## *Results*

There was no significant difference in the rates of absorption and elimination of alcohol regardless of the calorie content of the mixer used. However, the peak blood alcohol concentration reached was significantly higher in the age group ranging from 18-44 years compared to the 44+ age group on intake of alcohol in combination with the slim line mixer.

## *Conclusion*

Females today are conscious of their calorie intake and as a result they often prefer to consume alcohol in combination with a slim line mixer. Our study indicates that this may cause a higher level of alcohol to be absorbed into the body and therefore individuals may have a greater susceptibility to alcohol related risk factors.

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# **'Keeping Connected in Care': The social networks of young people who have experience of long-term foster care.**

Conor Mc Mahon

*Children's Services, HSE W*

## *Introduction*

Current knowledge relating to the experience of young people with a care history indicates that they may lack a connectedness to society and may experience feelings of isolation<sup>1, 2, 3</sup>. In addition, their social networks may be limited and they may lack the beneficial effects of social support<sup>4, 5</sup>. Consequently, these experiences may result in an inability or reluctance on behalf of some members of this group to form positive attachments.

## *Aims*

The aim of the present study is to examine the impact of long – term Foster Care on the social network experience of the young people. The research focussed on the following issues: the composition of the young people's social networks, the significance of the individuals and groups within the social networks, and the connection between foster care and their social network experience.

## *Methodology*

The study area is the North West area of the HSE-West and the study group is composed of two groups of young people: a group who are currently in care (n=21) and a group who have left the care system (n=17). The study utilised both qualitative and quantitative methods with the use of a semi-structured interview being supported by two standardised measures.

## *Results*

Findings from the study included: the smaller network size for the Left Care group; the greater significance of birth family to the left Care group; the greater importance of formal supports to the Left Care group; current involvement in organised groups and activities being more significant for the In-Care group; low numbers of people from the study group's local community (who were not part of either their birth or foster family and peer network) identified; and, the significance of foster parents, friends and birth siblings in terms of support to the young people.

## *Conclusion*

Findings indicated that Foster Care impacts on the young people's social network experience in the following ways: losing contact with extended family; a greater challenge in making and sustaining friendships; an impact on education; and, an inability to maintain contact with groups and activities that are of significance.

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# Topical Lidocaine patch 5% for acute post-operative pain control after Caesarean Section

Gilhooly, D; Mc Garvey, B; O'Mahony, H; O'Connor TC

*Dept of Anaesthesia, Sligo General Hospital*

## *Introduction*

Caesarean section is a common operation and post-operative pain management may present a challenge for anaesthetists.

## *Aims*

One of the main goals of anaesthetists is to provide effective post-operative analgesia while minimizing systemic side effects. A combination of different analgesics and/or regional anaesthesia (multimodal analgesia) has an opioid sparing effect, thereby reducing opiate side-effects which can impede recovery.

We present a case that demonstrates significant post-operative LSCS analgesia with lignocaine patch 5% and suggest that it may offer additional benefit to multimodal analgesia post LSCS<sup>1</sup>.

## *Methodology*

A 39 year old woman para 3 presented for elective caesarean section (LSCS) for breech presentation. She had a strong history of atopy and anaphylaxis to paracetamol, codeine, penicillin and latex. She was asthmatic triggered by aspirin. Epidural anaesthesia was unsuccessful and LSCS was carried out under spinal anaesthesia. Post-operatively she was unwilling to take analgesic medication due to fear of allergic reaction. Three 5% lidocaine patches were applied to the wound for post-operative analgesia.

## *Results*

Lidocaine patch 5% X 3 reduced her Pain Score from 10/10 to 5/10 at rest and 10/10 to 7/10 with movement and this benefit continued over 4 post-operative days (see graph). TENS was added and this improved associated back pain reducing the pain further by 2/10. This is the first description of Lignocaine Patch 5% for post-operative LSCS pain.

## *Conclusion*

We suggest that this method of delivery of local anaesthetic, which is easy to apply and has minimal side effects, be considered not as a sole agent but as part of a multimodal technique to address post-operative LSCS pain.

Further research is warranted into the use of this formulation of local anaesthetic delivery for post-operative pain. This has already commenced in Sligo General Hospital.

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# Audit on Antibiotic Prescribing in the Donegal Hospice 2010

David Flanagan

*Donegal Hospice*

## *Introduction*

The growth of antimicrobial resistance has prompted calls to reduce unnecessary antibiotic use, thereby increasing quality of care. Antibiotic prescribing in Hospice has added issues to consider. Is it a valid treatment option? How often are antibiotics prescribed in the end of life care (EoLC). There is little research information to guide practice.

## *Aims*

To measure the incidence of antibiotic prescribing in the Donegal Hospice, the method of administration, the incidence of antibiotic use in EoLC, and the appropriateness of the antibiotic chosen. The Gold standard chosen in regard to the appropriateness of the antibiotic was to conform to HSE advocated prescribing policy as elucidated in- 'Antimicrobial guidelines' -January 2009 Letterkenny General Hospital, version 3.

## *Methodology*

Sample size 50- Consecutive admissions May to August 2010

## *Results*

Characteristics of the sample: -

Age 44yrs to 92yrs, Median Age 70 yrs, 64% male and 56% female

Type of admission- 70% terminal care, 28% symptom control, and 2% respite.

Median length of stay 11 days (range <1 day to >60 days).

Antibiotic used in 52% of admission (medical records indicated reason in all cases) and

antibiotics used in 58% of terminal care admissions.

In terminal care 90% of antibiotics are given intravenously and in symptom control 80% of antibiotics are given IV.

Median time antibiotic stopped until death was 3 days with 32% remaining on antibiotics to within 24 hrs of death.

54% had laboratory investigation of infection with significant results guiding treatment found in 60%.

24 out of 26 antibiotic used conformed with LGH antimicrobial guidelines with minor differences in treatment of 2 UTI's

## *Conclusion*

This audit shows antibiotics are used frequently in Hospice with IV use seen in the majority of cases. Results indicate conformity with the most recent guidelines suggesting quality in this domain. Reauditing in 1 year can close the audit cycle. However questions remain- Is antibiotic prescribing valid in EoLC? Is intravenous antibiotic use valid in EoLC? Are antibiotics an appropriate treatment for palliation of symptoms in EoLC?

Antibiotics are used with curative intent generally. We feel, with some support in research literature, that antibiotics have a role in the palliation of symptoms at the end of life.

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## Cardiac Wallets – an Audit of Stock on Clinical Areas in SGH

E Dockery<sup>1</sup>, A Higgins<sup>1</sup>, R Lyons<sup>1</sup>, N Feituri<sup>2</sup>

1: Pharmacy Department, Sligo General Hospital; 2: Clinical Audit Dept SGH

### *Introduction*

In Sligo General Hospital (SGH), amiodarone and adrenaline, both high-alert drugs, are included in the cardiac wallet (pre-prepared packs of drugs used to manage cardiac arrest). High-alert medications are those that bear a heightened risk of causing significant patient harm when they are used in error.<sup>1</sup> Stock levels and contents of cardiac wallets for clinical areas are agreed locally by the SGH Resuscitation Committee (SGH RC) and are based on the American Heart Association Guidelines.<sup>2</sup> Depending on the speciality, different numbers of wallets are required as stock. From July 2009 to June 2010 almost €11,000 was spent on minijets for cardiac wallets. Adherence to the agreed stock levels: minimises the potential for medication errors associated with incorrect stock levels of high-alert medications; reduces costs and minimises wastage.

The Pharmacy Department dispensary follows good dispensing practice by adhering to the Code of Ethics and Practice, Pharmaceutical Society of Ireland and departmental guidelines for medication dispensing. Thus cardiac wallet contents are in date and in good condition with the seal intact when dispensed to clinical areas.<sup>3,4</sup>

### *Aims*

To examine the actual number of cardiac wallets stocked on clinical areas for compliance with SGH RC standards.

To check adherence to medication dispensing standards by examining the condition, seal, contents, expiry dates and storage of cardiac wallets on clinical areas.

### *Methodology*

The data collection form was designed.

The audit was carried out over a 2-day period in March 2010.

All adult cardiac wallets in 30 clinical areas were included.

The completed forms were collated and analysed by the Clinical Audit support team.

### *Results*

100% (n=30) of clinical areas had at least one cardiac wallet on each cardiac arrest trolley.

57% (n=17) of clinical areas were compliant with SGH RC stock level standards (ie no excess wallets or loose minijets). 100% (n=39) of wallets were compliant with standards regarding seal, condition, contents and expiry dates.

### *Conclusion*

Cardiac wallets contain high-alert medications. Stock levels for clinical areas, as agreed by SGH RC, are not being adhered to by all areas. The presence of extra cardiac wallets and loose minijets being stored in varying locations on clinical areas poses a risk to patient safety, increases the risk of error, carries the risk of selecting the wrong drug in an emergency and is not cost-effective.

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## Cardiovascular Profiling in Chronic Kidney Disease (CKD) in the North-West Region: Findings from the North-West CKD Pilot study

<sup>1</sup>E Ishag, <sup>1</sup>P. Higgins, <sup>2</sup>F Patton, <sup>2</sup>A Mutwali, <sup>2</sup>T Gilcreest, <sup>2</sup>J Clarke, <sup>1,2</sup>A Stack

<sup>1</sup>Renal Department, Sligo General Hospital, <sup>1</sup>Regional Kidney Centre & <sup>2</sup>Department of Biochemistry, Letterkenny General Hospital

### *Introduction*

The identification of biomarkers that mediate or identify a population at increased cardiovascular risk is an important goal in chronic kidney disease (CKD) management

### *Aims*

The goal of this study was to determine the prevalence of novel cardiovascular biomarkers & traditional risk factors among subjects with normal and impaired kidney function and determine their associations with estimated glomerular filtration rate (eGFR).

### *Methodology*

A cross-sectional study was performed to evaluate the association of cardiovascular biomarkers with renal function among 184 patients recruited from 2 hospital based-Nephrology Clinics (Letterkenny and Sligo) and 40 controls. A medical questionnaire captured data on clinical health, while whole blood samples were analysed for creatinine, cholesterol & subtypes, small density (sd)-LDL lipoprotein (a), homocysteine and hsCRP. Groups were staged by eGFR into 3 categories; Stage 1 & 2, 3 & 4 and stage 5 using the 4-variable MDRD formula and compared with 40 healthy controls. ANOVA, chi-square and logistic regression [Odds Ratio (OR)] was used for statistical comparisons. Ethical approval for the study was granted from Research Committees at both institutions.

### *Results*

Compared to controls, patients with stage 5 CKD had significantly ( $P<0.01$ ) elevated levels of lipoprotein a ( $50.5\pm 64$  versus  $93.0\pm 84$  mmol/L), homocysteine ( $8.9\pm 1.8$  versus  $25.4\pm 9.9$   $\mu\text{mol/L}$ ), CRP ( $6\pm 0.12$  versus  $10.4\pm 11.7$ ), and levels increased as kidney function declined. In contrast, Stage 5 CKD patients had significantly lower levels of total cholesterol ( $5.0\pm 0.6$  versus  $3.7\pm 1.2$ ); sd-LDL ( $0.66\pm 0.1$  versus  $0.47\pm 0.3$ ) and HDL ( $2.7\pm 0.6$  versus  $1.2\pm 0.5$ ) compared to controls and levels decreased as kidney function declined. Compared to patients with mild CKD (eGFR > 60ml/min), patients with eGFR < 15 ml/min were more likely to have abnormally high homocysteine levels [OR=15.40,  $P<0.01$ ], CRP levels [OR=2.39,  $P<0.01$ ], and abnormally low HDL levels [OR=2.27,  $P<0.01$ ] and less likely to have abnormal LDL [OR 0.14,  $P<0.01$ ] and sd-LDL levels [OR 0.35,  $P<0.01$ ].

### *Conclusion*

Elevations in some but not all existing cardiovascular biomarkers are seen in advanced CKD. Selective targeting of HDL rather than LDL cholesterol may be a useful strategy in reducing cardiovascular risk in this population.

# **An exploration of the teaching and assessing practices of the preceptor in an acute care hospital in Ireland**

Edel Mc Sharry

*St Angelas College, Lough Gill, NUI Galway*

## *Introduction*

Nurse education moved to an all graduate entry level in 2002. The preceptorship model of clinical teaching was introduced as part of this four year degree programme (BNSc)<sup>1</sup>. Scant evidence exists on how these changes have impacted the teaching and assessment of student nurses in clinical practice. A review of the international literature highlighted key issues that require further exploration these are; the pedagogical competence of the preceptor<sup>2</sup> the factors that impact the development of the student's professional identity; the relationship between the preceptor and student and the students exposure to and participation in practice.<sup>3</sup>

## *Aims & objectives*

1. How do preceptors engage in the clinical teaching and assessment of undergraduate BNSc (general) students?
2. What clinical learning processes are being utilised and what values and knowledge underpin these process in practice?
3. When does best practice based on current theoretical professional and educational principles occur?

## *Methodology*

This study involves a single case study approach. The case that is being examined is preceptor's teaching and assessment practices an acute care hospital in Ireland. It will investigate both the students and preceptors views and experiences of this process. The sample will include 12 students and 12 preceptors who have worked together on four clinical areas in the hospital. Sources of evidence include interviews, observation and a review of relevant documentation. An initial study took place in December 2009 involving two preceptors and two students. Data collection for the main study is ongoing and will be completed by June 2011.

## *Results*

Preceptors and students reported being involved in experiences that reflected some of the values of contemporary nursing practice and good pedagogical practices. However deficits in both these areas were reported.

## *Conclusion*

The findings of this preliminary study and an examination of the literature helped to formulate the conceptual framework based on situated theories of learning<sup>4</sup> which will underpin the data collection and analysis of this case study. The proposed outcome of this study will be to develop a theoretical framework for best practice in the Irish context.

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## **Carers have needs too! Analysis of the needs of carers of patients referred to an Old Age Psychiatric Service in the North-West of Ireland**

Dr Eugene Okorie, Marguerite Cryan, Siobhan McEniff, Monica Banks CMHN, Ann Gethin, Kevin McLaughlin, Gavin Sweeney, Joanne Tyrell, Sue Kelly, Darragh Loftus, Keelin Devaney, Kate Downey, Brendan Ward and Dr Geraldine McCarthy

*Mental Health services for Older People, Liscarney House, Pearse Road, Sligo*

### *Introduction*

Carers of Older persons with mental health difficulties have complex needs. Upon completing a previous study, which showed that carers of patients in our service have higher than average rates of depression, we decided to explore our patients' carers' needs in more detail.

### *Aims*

The aims of this study were to identify the needs of carers of our patients and to establish the proportion of carers whose needs were met, with a view to tailoring future services to address those needs.

### *Methodology*

100 primary informal carers of patients (living at home) who were referred to our service between June 2007 and July 2009. This was a cross-sectional study. Carers were assessed using the Geriatric Depression Scale –15 and an adapted version of Carer's Needs Assessment. Patients were assessed using GDS – 15 and Mini – Mental State Examination and their medical records were also reviewed.

### *Results*

81.8% of carers were females. The prevalence of depression amongst carers was 25%. Carers of male or behavioural disturbed patients were three times more likely to be depressed. 24% of all carers had their needs met and/or did not have any needs whilst 92% had some needs met. 8% had none of their needs met. Carers of disturbed patients were four times more likely to have unmet need.

### *Conclusion*

Caring for male or disturbed patients increases carer's risk of depression. A large proportion of carers have unmet needs and the more disturbed the patient is, the less the carer is able to cope.

## **Arylseterase/Paraoxonase Polymorphism in a sample Irish Population**

G. I. Adebayo, A. Samad, C. McHugh, J. Williams, & K. Pannu.

*Department of Medicine & Biochemistry, Sligo General Hospital.*

### *Introduction*

Arylesterase/Paraoxonase (A/P) is a polymorphic protein synthesized in the liver and secreted into the blood where it is exclusively associated with high-density lipoprotein (HDL). The esterase has been shown to decrease lipid peroxidation of low-density lipoprotein (LDL) and inhibit atherosclerosis in an isoform-dependent manner.

### *Aims*

Given the problem of cardiovascular disease, we decided to determine the activity of A/P, as well as assess the distribution of its isoforms in a sample of Irish population.

### *Methodology*

We studied the hydrolysis of both paraoxon and the aromatic ester phenyl-acetate in Tris buffer, pH 8.0, spectrophotometrically, using serum from 98 healthy non-medicated volunteers, aged 18 – 58 years.

### *Results*

With paraoxon as a substrate, we observed about 25 times variation in enzymatic activities (0.021 U/ml – 0.520 U/ml) with a distribution that deviates from normality. Furthermore, such activity showed marked difference in susceptibility to salt stimulation (-4.0% - 251%). On the other hand, the enzymatic activity of this protein on phenyl-acetate was less variable (3.6 times; 49.2 U/ml – 177.0 U/ml) and normally distributed. The activities to both substrates were not dependent on age or gender.

Salt-stimulated paraoxon hydrolysis/phenyl-acetate ratio was trimodal in distribution, indicating catalytic activity determined by two alleles at one autosomal locus.

### *Conclusion*

In our sample population, A/P activity is inherited in a Mendelian fashion, and the frequency of the recessive and dominant alleles are 0.640 and 0.360 respectively. This suggests that about 41% of our volunteers are homozygous for the isoform of the protein which is very efficient at protecting LDL from oxidation.

## **Involving young people in the dissemination of health information and research data**

Gail Cummins<sup>1</sup>, Etain Kiely<sup>1</sup>, Saoirse Nic Gabhainn<sup>2</sup>, Priscilla Doyle<sup>2</sup>

*1: Institute of Technology, Sligo; 2: NUIG*

### *Introduction*

The Health Behaviour in School-aged Children (HBSC) survey, is a cross-national study undertaken in collaboration with the WHO. HBSC aims to further understanding of the health and well-being of children, and focuses on the social contexts of children's lives. Beyond the data collection phase children have had no input or influence on either data analysis or dissemination of findings. In Ireland, a range of other stakeholders such as policy-makers and practitioners are provided with various dissemination options and can request specific data analysis and topic-focused reports. Therefore children have not been included as equal stakeholders in this process. This study aimed to address this inequality.

### *Aims & objectives*

The aim of this study was to explore children's views of HBSC topics, to ascertain the information they would like regarding these topics, and to determine what the children perceived to be the most appropriate formats for dissemination of HBSC Ireland data as a youth friendly resource, while exploring methods and levels of engagement for children in research.

### *Methodology*

A series of participative workshops with school-children were conducted to explore children's views of the HBSC question areas, labelled topics. Specifically children were invited to identify the most interesting topics, and to consider and report on what, if any, information they would like to receive about these topics. Participants were also asked to inform us about appropriate dissemination formats for children. Workshops were conducted with children aged 10-18 years from 9 mixed gender, disadvantaged and non-disadvantaged schools in both urban and rural areas.

### *Results*

Participating children identified alcohol as the most interesting topic, followed in ranking by the topics puberty, drugs, drunkenness, smoking, fighting, general health, body image, physical and emotional health, happiness and friendships. A wide range of information needs and desires were identified, with similarities evident across topics. DVDs were proposed as the most effective channel for disseminating this information to children.

### *Conclusion*

These results suggest that researchers and research commissioners need to disseminate information in a more creative way in order to more fully honour child participants. This research has provided an opportunity for children's roles to be brought in line with other stakeholders in the research process.

# **A questionnaire study assessing knowledge and practices of leading intensive care personnel in Ireland to intra-abdominal pressure (IAP) measurement, intra-abdominal hypertension (IAH) and the abdominal compartment syndrome (ACS)**

Gerard Garrett<sup>1</sup>, Michael Sugrue<sup>2</sup>, John Laffey<sup>3</sup>

1: Medical Student, National University of Ireland, Galway; 2: Dept of Surgery, Letterkenny General Hospital; 3: Dept of Anaesthesia, UCHG

## *Introduction*

IAH and ACS occur in approximately 32% and 4% respectively of patients admitted to Intensive Care Units globally.<sup>1</sup> Consensus definitions and guidelines relating to monitoring and management of IAH /ACS have been published by the World Society of the Abdominal Compartment Syndrome (WSACS).<sup>1,2</sup> It has been recommended for almost twenty years that high risk patients have IAP monitoring in Intensive Care.<sup>3</sup> WSACS recommendations aim to identify high risk groups suitable for IAP monitoring and promote IAH/ACS management at an early stage, with both medical and surgical interventions.<sup>2</sup> Adherence to practice guidelines concerning IAP-ACS improves survival in Intensive Care, without increased resource utilisation.<sup>4</sup>

The profile of ACS in Ireland was increased with the advent of the fourth world congress of ACS (WCACS) held in Dublin in 2009, attended by 380 delegates from around the world. No study had evaluated knowledge and practices relating to IAP-ACS in Ireland. Despite the scope for reduced morbidity and increased survival from IAH/ACS<sup>4,5</sup>, the attitude toward these conditions has been variable worldwide. This study aimed to define the Irish outlook on IAP-ACS.

## *Aims & objectives*

This study assessed knowledge and practices of leading intensive care personnel in Ireland to intra-abdominal pressure (IAP) measurement, intra abdominal hypertension (IAH) and the abdominal compartment syndrome (ACS).

## *Methodology*

ICU medical and nursing directors of all 17 level 2 and 3 Intensive Care Units in Ireland were invited to participate in a survey to assess knowledge of IAH/ACS, risk factors associated with it and current practice of IAP monitoring. An electronic questionnaire was completed by respondents.

## *Results*

There was an 88% response rate and every Intensive Care Unit was represented. All participants were familiar with the term ACS (n=30, 100%). 7/30 (23.3%) could define ACS according to consensus definitions. When presented with a list of twenty risk factors for IAH/ACS; 3/30 (10%) identified all twenty risk factors. 20/30 (66.7%) estimated how many cases of ACS they would expect in a year, the mean estimate was 1.7 cases per Intensive Care Unit per year. The intra-vesicle technique to measure IAP was used in all ICU's surveyed, as required by clinical judgement. Practice guidelines for risk assessment and screening were in place in 2/17 (12%) of hospitals.

## *Conclusion*

Despite an awareness of IAH/ACS; risk factors could be better identified and more cases of IAH/ACS should be detected in Irish Intensive Care. Education and implementation of practice guidelines are urgently required.

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# An Exploration of Telephone Coaching in Type 2 Diabetes

Helen McGloin<sup>1,2</sup>, V. Coates<sup>2</sup>, J. Boore<sup>2</sup>

1: St. Angela's College, Sligo; 2: University of Ulster

## *Introduction*

Lifestyle modification for people with type 2 diabetes can help control risk factors for complications [1]. Coaching uses a partnership approach to support the individual to make their desired health behaviour changes and draws on a number of theories including Motivational Interviewing [2] the Transtheoretical Model of Behaviour Change [3] and Appreciative Inquiry [4]. This study was developed to explore the feasibility of coaching to support behaviour change using the criteria for the evaluation of complex interventions[5].

## *Aims & objectives*

To describe the coaching conversations using the Transtheoretical model [3] of behaviour change as a conceptual framework.

## *Methodology*

The researcher was trained and certified as a wellness coach [6]. Purposive sampling was used to identify 10 people with Type 2 Diabetes aged 40-70 years. Following written consent participants were coached weekly via the telephone for four weeks followed by fortnightly calls for 8 weeks. Phone conversations at baseline, 1 month and 3 months were transcribed and qualitative content analysis was used to organise the data into a structured framework [7].

## *Results*

The main themes identified in the first call were, visualising wellness, what to change, stage of change, how to change and obstacles to change. One participant visualised wellness as:

'That I hop out of the bed like years ago and that I am refreshed and I have enough sleep done .....and I am in great form'.

The main themes in the midpoint call were the processes of change, coaching to support behaviour change and actual behaviour change. A change in thinking was one outcome:

'So I'd hoped that that little bit extra Glucophage might help .... until I am a bit more responsible in my own actions.....But for me to ask for more tablets...'

The main theme in the final call was the maintenance of the behaviour change and the strategies to be used to achieve maintenance.

## *Conclusion*

These findings illustrate the choices made by people with Type 2 diabetes in relation their lifestyle change, the strategies they used and the obstacles encountered.

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# The Use of PRN medications in two residential centres for people with learning disabilities

Inam Ul-haq<sup>1</sup>, Enyinnaya Ezema<sup>2</sup>, Rubina Irfan<sup>2</sup>

1: Mental Health services for learning disabilities Sligo/Leitrim; 2: Sligo Mental Health Services

## Introduction

PRN (pro re nata, or as-needed) medications can timely relieve patients' symptoms (1), but it can expose patients to unnecessary psychotropic medications (2) and may place patients at increased risk to side effects if the use is excessive and inappropriate.

People with learning disability are more likely to have side effects of medications than in general population (3).

We noted from our weekly clinics in one of the two residential centres, A & B, that a separate sheet was used for PRN medications in centre A. The separate sheet has more space for more PRN medications prescription and more potential for prescription.

## Aim & objectives

To assess and compare the amount of different psychotropic medications in two residential centres for people with learning disabilities.

## Methodology

We randomly selected 36 medication sheets from each centre. The sheets were of adults patients who have learning disability and mental health problem. Overall there is no major difference in the level of learning disability and a mental health problem in the two centres A & B. All PRN medications of the selected patients were entered into word excel and the data was presented in the form of descriptive analysis including frequencies.

Medications were grouped into benzodiazepine, antipsychotic, antiepileptics, analgesics and others. Medications under the group "others" were mostly prescribed for physical conditions such stomach problems, constipations, skin problems etc.

## Results

In total 338 PRN medications were prescribed in centre A to 36 patients representing 9 PRN medications on average for each patient. While 158 PRN medications in total were prescribed in centre B to the same numbers of patients, representing 4 PRN medications on average for each patient

## Conclusion

The numbers of PRN medications are more than double in centre A compared to centre B. The excessive use in centre A is hypothesised to be due to the separate sheet for PRN only medications.

Guidelines need to be drawn to minimise the excessive use of PRN medications in both centres followed by re-audit of the appropriate use of PRN medications.

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# Gender differences in response to experimental heat pain stimuli in the Irish population – a preliminary study

Khan J<sup>1</sup>, Murray C<sup>2</sup>, O'Connor TC<sup>3</sup>.

1: Medical Student, NUIG; 2: Health Science and Physiology, Institute of Technology, Sligo; 3: Dept of Anaesthesia, Sligo General Hospital

## *Introduction*

Although a growing body of evidence suggests that there are gender differences in pain threshold and tolerance in response to experimental pain stimuli<sup>1</sup>, no study to date has yet examined these modalities in the Irish population.

## *Aims*

This preliminary study tests the hypothesis that Irish males have a higher heat pain threshold and tolerance than Irish females.

## *Methodology*

Sixteen Irish males and female students fitting inclusion/exclusion criteria were recruited. Controlled heat stimuli were delivered by a thermister (Somedic). The thermode was sequentially applied to the right and left thenar eminence and sole of each foot. After confirmation of normal sensory perception, heat pain threshold was recorded by asking subjects to press a button when they felt a change from non-painful to painful sensation. Heat pain tolerance was then assessed by asking subjects to press the button when pain became intolerable. Results were analysed using independent samples t-test.

## *Results*

This preliminary study shows that Irish males have a significantly higher heat pain tolerance than Irish females at all 4 sites assessed ( $p < 0.002, 0.001, 0.003, 0.017$ ). Males were also shown to have a statistically significant higher heat pain threshold at 2 of 4 sites ( $p < 0.042, 0.017, 0.07, 0.28$ )

## *Conclusion*

Although the population sample is small, the significant differences in these findings suggest that differences exist in heat pain responses between genders in the Irish population. Further research to determine whether differences exist in other pain sensory modalities (cold, electrical, pressure, ischaemia) as well as in clinical pain has commenced. Greater understanding of the differences between male and female pain appreciation should lead to improvements in the clinical management of both acute and chronic pain.

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# Source Location of Cracks in Bone Using Acoustic Emission

John O'Toole, Dr. John Hession, Ger Reilly, Dr. Leo Creedon

*Department of Mechanical and Electronics Engineering, Institute of Technology Sligo*

## *Introduction*

The ability to predict the location of an imminent fracture is useful in the treatment and the prevention of fractures in bone. Acoustic emission (AE) has been used by researchers to study the fracture process in bone<sup>1,2,3</sup>. A relationship was found between the amount of detected AE activity and the stage in the fracture process a bone sample is at<sup>1,2</sup>. Knowing the location of this AE activity can be used to predict where the bone will fracture.

## *Aims & objectives*

To develop a technique to locate cracks and microcracks in bone samples and thus predict where the bone will fracture. The main goals are to determine: if AE related damage can be located in the samples, a suitable technique to achieve this and what accuracy is possible.

## *Methodology*

Bovine bone samples were machined to a rectangular shape, 65x22x5.5mm. Four acoustic emission sensors were attached to the surface of the sample. Both artificial and real cracks were induced in the sample. An AE system was used to detect and record the AE activity. Then two source location algorithms (Hyperbolic Source Location and Regression Source Location) were applied to the AE data and location coordinates were produced. These were compared to known locations of the artificial cracks to compute location errors. In tests with real cracks the bone samples were loaded until they fractured. Then the fracture lines were compared to the predicted crack locations that preceded the final fracture.

## *Results*

In tests of artificially induced cracks, a mean absolute distance error of 2.10mm and 1.10mm was achieved by the Hyperbolic and Regression algorithms respectively. In tests with load induced cracks a close correlation was found between both algorithms and the visible fracture lines. The Regression algorithm performed better.

## *Conclusion*

Given the size of the bone sample the results produced by the Regression algorithm are impressive. The test with load induced real cracks demonstrated that before a bone sample shows any obvious sign of fracture, AE can be used to indicate not alone that a fracture is imminent but also the location of this impending fracture.

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# Time interval between first palliative care consult and death in acute hospital patients

Justin Okeke, Cathryn Bogan

*Palliative Care Unit North West Hospice Sligo*

## *Introduction*

In 2001 the National Advisory Committee on Palliative Care (NACPC) highlighted the need to incorporate Specialist Palliative Care (SPC) early in the disease trajectory of patients with life-limiting conditions <sup>1</sup>. Our perception is that patients are still referred late to Palliative Care (PC). As 40% of deaths in North West Hospice (NWH) Palliative Care Service occur in Sligo General Hospital (SGH) we decided to investigate this subsection of our patients.

## *Aim & Objectives*

To determine the length of survival amongst palliative care patients in SGH and to compare survival of Malignant versus Non-malignant cases.

## *Methodology*

This is a retrospective study. Data was obtained from the SMI (Pal.Care) computerized database of all deaths that occurred in PC service between the 1<sup>st</sup> July and 31<sup>st</sup> December 2008. There were 143 deaths in the 6 months period but only patients who died in SGH were included in the study. Patients were excluded if they died in the Hospice/Community, if there charts could not be located or if they died before first visit. Statistical analysis was done using the SPSS Windows 17 version.

## *Results*

Only 54 patients met the inclusion criteria. The overall median survival for all patients seen in SGH is 5. The median survival for malignant condition is 11 days and 3 days for non-malignant. 81% of non-malignants died within 1 week compared to only 24% of malignant patients.

## *Conclusion*

This study confirms our perception that patients are referred late to PC in SGH. Interestingly the median survival for all patients seen in our service was 35 days. It would also appear non-malignant patients are referred once they are actively dying. The recent publication "Palliative Care for all" <sup>3</sup> hopes to give guidance regarding referral of patients with non-malignant disease to PC. Late referral leaves little time to establish rapport with patient/family and address complex symptoms <sup>2</sup>.

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## **Epidural Analgesia for Labour Pain – Are we getting informed consent?**

K Fitzgibbon , T O' Connor

*Department of Anaesthesia and Pain Medicine, Sligo General Hospital*

### *Introduction*

It is both good medical practice and a legal requirement that women give informed consent for epidural analgesia for labour but it has been anecdotally noted by clinicians that there is variability among women in their awareness of the procedure and its potential complications.

### *Aims*

To identify where and how women acquire knowledge of the procedure and which groups of health care professionals provide such information  
To identify whether women who undergo the procedure are satisfied with information provided and believe they have given informed consent  
To find out whether women are aware of potential risks associated with the procedure.

### *Methodology*

Women who had received epidural analgesia for labour were followed up on the post natal ward between September 2009 and October 2010 and asked to complete an anonymous two page questionnaire. Included: all completed questionnaires returned during the above time period. Excluded: incomplete or illegible questionnaires. 50 completed questionnaires were returned.

### *Results*

Women received information verbal and written sources. The most common source was antenatal class, in addition to health care professionals, family members and friends, antenatal clinics, books, magazines, the GP surgery, internet and television. Healthcare professionals who provided information included midwives, anaesthetists and obstetricians. Most women could recall some potential complications of epidural analgesia, but only 12% could recall the most common complication i.e. failure to completely relieve labour pain. Only 6% of women surveyed were aware of the increased risk of having a prolonged labour or requiring an instrumental delivery. 10% of women surveyed had some misconceptions concerning potential complications. 96% of women surveyed were satisfied with the information provided to them and 96% believed they had given informed consent.

### *Conclusion*

There was a high satisfaction level among women who received epidural analgesia with the information provided about the procedure. Improvements could be made in the delivery of information to women to assist them in making informed choices about epidural analgesia for labour.

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## **A Survey to assess parental satisfaction with the school hearing service in the Sligo/N.Leitrim Area**

KR Harkin, M Connolly, I Nic Donncha, D Murray & C Walsh.

*AMO Office, Community Care, Sligo/Leitrim/W.Cavan*

### *Introduction*

The School Hearing Service<sup>1</sup> screens Junior Infants for hearing impairment, initially in school by the PHN and then at the clinic by the Senior Medical Officer. Parents were surveyed as part of a review of this service.

### *Aims & objectives*

To assess parental satisfaction with the School Hearing Service, identify any major complaints, ascertain elements of the service valued by parents, assess parental awareness (prior to school screening) of their child's hearing difficulty and highlight the Child Welfare Clinic (CWC) as a resource for screening when parents do have concerns.

### *Methodology*

The study instrument was a questionnaire, distributed to parents of children attending the School Hearing Clinic (April - Oct.2009) consecutively until 60 were returned. The data was collated and analysed in epi-info and manually.

### *Results.*

Satisfaction was high, both the School Entry Screen (SES), (Response Rate 98.3%) and the clinic (RR 100%) were considered useful (100%). There were very few complaints, 78.2% expressed satisfaction (RR 76.7%). Waiting times were an issue for 4.3% .4.3% requested further screening in another age group. 5% considered information regarding services poor (RR 88.3%). The service as a whole was considered valuable (RR 51.7%). 64.5% requested that no change be made to the service.

56% of parents were unaware of any hearing loss in their child prior to the school hearing test (RR 98.6%).

75% of parents were unaware of the Child Welfare Clinic (RR 86.7%) Of those children whose parents knew of or suspected a hearing difficulty only 10% knew they could avail of the CWC (RR 85%).

### *Conclusion*

This service identifies and follows up children with hearing loss, often unrecognised by parents at an important stage in their development. Parents wish it to be continued, developed, resourced and highlighted<sup>2</sup>. Disseminating information by alternative methods may also be useful.

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# Comparison of the Plusoptix S04 binocular autorefractor to cycloplegic refraction performed by an ophthalmologist

Laura Gilmartin

*Orthoptic Department, SGH.*

## *Introduction*

Amblyopia is the most common cause of visual impairment in children<sup>1</sup>. It is a frequent cause of monocular vision loss in children<sup>2</sup>. For this reason, ascertaining a child's underlying need for glasses is very important as refractive correction is the first line in amblyopia treatment.

## *Aims and objectives*

To determine the accuracy of undilated binocular autorefraction using the PlusOptix S04 autorefractor, as compared to cycloplegic refraction performed by an ophthalmologist.

## *Methodology*

A retrospective search of orthoptic notes in Sligo General Hospital revealed 42 children (22 male, 20 female), who had a cycloplegic refraction performed by an Ophthalmologist within eight weeks of a PlusOptix S04 binocular autorefraction between March 2006 and July 2008. All children were under 8yrs and had a deviation measurement of  $<10^\Delta$ . A local standard for an acceptable difference was set in conjunction with the consultant paediatric ophthalmologist. The completed data was sent to the clinical audit support team for collation and analysis.

## *Results*

The standard for an acceptable spherical difference was only achieved in 67% of cases. The standard for an acceptable difference in anisometropia and astigmatism was achieved in 88% of cases.

## *Conclusion*

The PlusOptix S04 binocular autorefractor was found to agree with a cycloplegic refraction performed by an ophthalmologist in 88% of anisometric and astigmatic refractions. However the spherical results were less reliable at only 67%. An underestimation of hypermetropia was shown. Therefore cycloplegic refraction as performed by an ophthalmologist is still necessary and not replaceable by an autorefractor.

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# **An audit of diagnosis recording for maternal delivery episodes of care for pregnant women with pregestational diabetes at a tertiary centre**

Nestor L, Leonard S, Owens L, Carmody L, Avalos G, O'Connor C, Lydon K, Dunne F

*Department of Medicine, National University of Ireland, Galway, Ireland*

## *Introduction*

Accurate Medical records and coding of clinical data are essential in the hospital setting.

## *Aim*

This retrospective study aimed to assess conformity between information stored in patient medical records and recorded in the Diabetes electronic management system (DIAMOND) compared with that encoded by HIPE(Hospital In Patient Enquiry). HIPE coding after delivery episodes currently utilises patients' obstetric records only for information. We also examined whether discrepancies resulted in financial loss.

## *Methodology*

Pregnant women with pre-gestational Diabetes Mellitus (Type1 and 2) who delivered in 2008-9 and who had a live birth outcome were included. Variables analysed included; Diabetes type and complications, delivery type and obstetric complications. The clinical variables were encoded as per ICD10-AM index to allow accurate comparison. Analysis was completed using HCAT(HIPE Coding Audit Tool).

## *Results*

Data was examined for 35 women. Discrepancies between sources were seen in 32 of 35 cases. Variables encoded differed from that in medical records or DIAMOND in 11 of 39 cases. Variables differed in HIPE in 31 of 35 cases, often with multiple variables missing or lacking appropriate specificity for each case. This amounted to a total of 69 inaccurate variables. Most common variances were Diabetes complications, including the type of retinopathy and nephropathy. In 8 of 35 cases there was an associated statistical financial loss, amounting to €17661.

## *Conclusion*

These results suggest that both obstetric and general records should be used for obstetric patient encounters and clinical coding. If DIAMOND is complete with all required diagnoses and available to both Clinicians and Clinical Coders this also would improve accuracy of Coding and reduce clinical risk.

## *References:*

ICD 10 Matrix  
Diamond Information systems

# Blood Transfusion Patients Perspective

Louise Robinson<sup>1</sup>, Evelyn Mc Manus<sup>2</sup>

*Haemovigilance Dept, The Laboratory, SGH; 2: St Angelas College, Lough Gill, Sligo*

## *Introduction*

Blood Transfusions can be a life saving measure in some situations, and is a widely used therapy in hospitals with approximately 138,540 red cells 25,425 plasma and 20,355 platelets being issued by the Irish Blood Transfusion Service (IBTS) in 2006'. The rationale for this study resulted from the paucity of research available on this particular area and the researcher's keen interest in the topic. The researcher wanted to obtain a deeper and enriched understanding of how recipient's perceive the experience of receiving an allogenic blood transfusion in hospital in an Irish context.

## *Aims & objectives*

The main purpose of this study was to explore and obtain an in depth understanding of the lived world of recipients who received an allogenic blood transfusion.

## *Methodology*

A qualitative research design underpinned by a Heideggerian phenomenological approach was utilised. Ten participants were purposefully selected by the researcher. Semi-structured interviews were conducted post receipt of an allogenic blood transfusion. Data analysis was carried out with the aid of a software package called NVIVO and an analytical framework was adhered to.

## *Results*

Seven themes were generated from the study findings: Transfusion in context, Disempowerment, Gratitude to donors, Exposure to risk, Embodied experience, Experience of the positive effects of transfusion, Care and being monitored.

## *Conclusion*

Analysis revealed that in the context of patients overall illness experience the experience of receiving an allogenic blood transfusion was of less significance than the back ground to the illness. Participants highlighted an experience of disempowerment where they were poorly informed for the reason for the allogenic blood transfusion and were not active participants in their care. Participants also highlighted their gratitude to the donors who donated the blood. The study highlighted that participants not only had a cognitive experience but also a bodily experience. Few participants highlighted the risks of transfusions and were happy to receive the donor blood. They all spoke positively of feeling physically improved as a result of the transfusion. They also spoke about being cared for and monitored by the close observations carried out by the nursing personnel during the transfusion. These findings identified may lead to an improved hospitalised experience for adults receiving an allogenic blood transfusion.

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# High-Alert Medication: Warfarin – an audit of safe prescribing in Sligo General Hospital

Broderick M, Hayes A,

*Pharmacy Department, SGH.*

## *Introduction*

Warfarin (an anticoagulant) is classified as a “high-alert” medication; it is frequently identified as causing preventable harm and subsequent admission to hospital.<sup>1</sup>

SGH Drugs and Therapeutics Safety Committee (D&TSC) is a multidisciplinary executive committee with responsibility for managing the safe use of all medicines in SGH, as well as approving and disseminating hospital-wide prescribing strategies and decisions concerning the use of medicines.<sup>2</sup>

To increase patient safety and minimise the risk of medication incidents occurring with warfarin, the D&TSC developed an evidence-based, good clinical practice guideline for anticoagulant use<sup>3</sup> and a pre-printed Warfarin Prescription Sheet (WPS)<sup>4</sup>. Use of the WPS for warfarin prescribing is mandatory.

## *Aims & objectives*

The following criteria were applied:

- All medical patients (100%) already prescribed warfarin prior to admission or all medical patients (100%) initiated on warfarin should be prescribed their warfarin on a WPS.
- Fields 1-4 on the WPS should be completed in full.

The audit also aimed to assess if prescribers use the suggested evidence-based dosing schedule for warfarin initiation.

## *Methodology*

1. A data collection form was designed.
2. All medical patients prescribed warfarin were included.
3. Data was collected by pharmacists on five clinical areas over four weeks.

## *Results*

Adherence to criteria:

- In 100% of cases, the WPS was used for all medical patients already prescribed warfarin prior to admission and all medical patients initiated on warfarin.
  - 0% (n=61) of WPS were completed in full i.e. 0% of WPS had all four fields (1-4) completed.
- The suggested evidence-based dosing schedule for warfarin initiation was not used in 79% (n=26) of patients initiated on warfarin.

## *Conclusion*

There was 100% compliance with the mandatory use of the WPS for medical patients on warfarin therapy. However, all of the required fields on the WPS were not completed. Completion of all required fields would increase patient safety and help reduce the risk of medication errors occurring with warfarin (a high-alert medication). Despite being an evidence-based tool for safe-prescribing, prescribers are not following the suggested D&TSC dosing schedule for warfarin initiation.

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# **A Study of Women's Knowledge of the Combined Oral Contraceptive pill and use of Emergency Contraception in general Practice**

Dr. Maria Mc Dermott, Dr. Scott Walkin

*Moyview Family Practice, Dillon Terrace, Ballina*

## *Introduction*

Nearly half of all pregnancies in the United States each year are unplanned and many unintended pregnancies result from incorrect use of contraception. Of the unplanned pregnancies in the US ( 3.1 million) 43% occurred in women who used contraception inconsistently or incorrectly and 5% occurred due to contraception failure. The combined oral contraceptive pill is the most commonly used form of contraception by women worldwide. It is important to ensure that women use the pill consistently and correctly. Much of the education regarding pill use occurs at general practice level in Ireland.

## *Aim*

The main aim of this study is to examine the knowledge of the basic rules regarding pill use and emergency contraception of women attending a GP family practice.

## *Methodology*

This was a six week cross- sectional study of presenting patients at the Moy View Family Practice, Mayo requesting a repeat pill prescription for the combined oral contraceptive pill. A purpose designed questionnaire was administered to women aged 18-50, who had at least one prior pill prescription.

## *Results*

38 women were recruited into the study. Overall, this study showed patients have a good knowledge of basic rules regarding COCP. Knowledge regarding drug interactions overall was good, especially antibiotics, surprisingly a number of patients believe simple analgesia and cold and flu remedies interfere with pill. Knowledge regarding anti epileptic drugs was poor by comparison. Most patients were aware severe diarrhoea and vomiting causes problems with the pill. Worryingly 18% patients thought the pill was still effective if start a pack up to 48 hours late and 18% of patients would not take the forgotten pill immediately.

## *Conclusion*

Most patients aware of the basic rules on oral contraception. There is however room for improvement in the areas of missed pill and starting pill pack late. Improved communication on pill use, including written information, is recommended. Limitations of the study largely were largely related to study size a larger multicentre cross sectional study would be needed to further explore these issues. Since this study a new pill protocol is being implemented in the Moyview Family Practice in an attempt to further address these findings.

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## Falls and disability in a study of Sarcopenia and Bone health in Parkinson's disease

Marie Ryan<sup>3</sup>, Gloria Avalos<sup>4</sup>, J. G. Doherty<sup>1,3</sup>, MS Farid<sup>1</sup>, B. Rooney<sup>2</sup>, P. M. Hickey<sup>1,3</sup>

*Geriatric Medicine Department<sup>1</sup>, DXA Department<sup>2</sup>, Sligo General Hospital;  
Dept of Internal Medicine<sup>3</sup>, Dept Medical Education and Informatics<sup>4</sup>, National University of  
Ireland, Galway (NUIG)*

### *Introduction*

We wished to ascertain the prevalence of falls and sarcopenia in Parkinson's disease (PD)-a recognised cause of disability in the elderly<sup>1</sup>.

### *Methodology*

PD patients attending our Geriatric Medicine Clinics were invited to partake in a disability, muscle and bone health study. Patients were assessed with the PDQ39 q.o.l. questionnaire and MDS UPDRS. Bone and soft tissue DXA was performed (GE Lunar Prodigy). Vitamin D levels, upper limb grip strength, cognition and fracture risk (FRAX) were assessed.

### *Results*

There were 51 respondents from 65 requests; 66.7% were male and mean age 73.47 years (CI 71.66 – 75.28).

The mean Hoehn and Yahr stage was 2.82 (CI 2.48 – 3.17) and mean MDS UPDRS score 87.09 (CI 77.04 – 97.13).

Appendicular skeletal lean body mass (ASM) was calculated by soft tissue DXA and sarcopenia assessed by the formula  $(ASM)/Height (H)^2$ . The mean was 7.38 kg/m<sup>2</sup>, (CI 6.88 – 7.87).

Sarcopenia was present in 29% and Osteopenia or osteoporosis in 71% of cases scanned. 10-year fracture risk (FRAX method) was 11.23% (mean) for major osteoporotic fracture (CI: 8.27-14.18) and 4.41% (mean) for hip fracture (CI: 2.91-5.91).

The mean Vitamin D level was 51.07 nmol/L (range 10 – 120; CI 44.12 – 58.01).

60.8% reported falls and 23.5% fractures.

On the PDQ-39 questionnaire- patients reported the following: 49% frightened or worried about falling over in public, 52.9% painful muscle spasms or cramps, 51% aches or pains.

In the MDS-UPDRS(I)-37.3% reported feeling depressed, 45.1% anxiety, 58.8% pain and 32% apathy; sarcopenic patients reported 45% higher scores cumulatively.

### *Conclusions*

Most patients had PD non-motor symptoms relevant to bone and muscle health; more disability was reported in the sarcopenic group. In PD patients sarcopenia assessment is feasible by DXA. Falls are common in PD; the hip fracture risk (FRAX method) suggests that all PD patients should be considered for DXA scanning.

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## **Best Practice –Safe Practice**

### **The first Irish Hospital to adopt a completely closed peripheral vascular catheter system**

Scanlon, M., Hannon, C.

*Nurse Practice Development Unit, Sligo General Hospital (SGH), Ireland.*

#### *Introduction*

This is the journey of one general hospital in Co Sligo, Ireland as the Nurse Practice Development Unit (NPDU) led out on a 'Best Practice Initiative' for management and care of Peripheral Vascular Cannulae (PVC).

In 2008 nurse practice developers carried out a literature review and an audit of the Intravenous Infusion Policy of the hospital: specifically 1) Documentation in use. 2) Phlebitis and Infiltration scoring/recording. 3) Length of time that PVC were in situ. 4) Reporting/Risk management practices.

#### *Methodology*

A nurse led pilot was proposed to develop new documentation and to research safety cannulae and existing systems in the hospital. The hospital's intravenous policy was reviewed concurrently. An Intravascular Device Assessment Record (IVDAR) was developed. Only one closed system that met the group criteria was found. The costing was compared with sets currently used within clinical areas. After comparison, an overall cost reduction was predicted for the hospital. The system was phased in hospital wide with training led out by the NPDU clinical facilitators and supported by BD trainers over a three months in 2009.

#### *Results*

Education for nurses, NCHD's medical and nursing students resulted in wide compliance with the IVDAR, and the closed IV catheter system; Overall, the adoption of an all in one cannula and combined extension set reduced cost to the hospital and increased compliance with the closed system to 85% hospital wide.

#### *Conclusion*

This nurse led initiative led to SGH being the first hospital in Ireland to adopt a completely closed, safety PVC system. The roll out of the IVDAR presented a standard for the unit to audit practice and to introduce PVC care bundles to clinical areas, which is ongoing.

#### *References*

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# Solar UV Radiation – Do Health Risks Vary Within Ireland?

Michael Healy

## *Introduction*

Solar ultraviolet (UV) radiation is a known health risk, contributing to skin cancer. In Ireland, one in eight men and one in ten women will develop skin cancer by the age of 74 <sup>1</sup>. Provision of localised information is needed to provide evidence based practical advice for health protection. This project develops local risk information for three locations in Ireland. The risk can be compared.

## *Aims*

UV radiation increases with nearness to the equator. The hypothesis was that the health risk from UV radiation would be greatest in Cork and least in Donegal, with Dublin ranking somewhere in between. The aim of this study was to see if this hypothesis held true.

## *Methodology*

The WHO UV Index <sup>2</sup> which grades risk into low, moderate, high, very high, and extreme was used to categorise the level of health risk on each day in June, July and August 2010 in Donegal, Dublin and Cork. Descriptive statistics were used to quantify the extent of the risk at each location.

## *Results*

The expected North South gradient in risk was not found in data for Summer 2010. The results show Dublin had the most days (20.43%) in the High risk category, followed by Cork (17.2%), and Donegal (4.3%).

## *Conclusion*

The hypothesis that risk of UV exposure increases with nearness to the equator was not proven true in this study. The calculation of risk should therefore not be on the basis of latitude alone. Good health promotion and disease prevention require the provision of a localised UV forecast. This will be the subject of further research work at Sligo.

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# **An exploration of motivation in nurses working in palliative care in a hospice and community setting**

Mona Carroll<sup>1</sup>, Miriam Smith<sup>2</sup>

*Physiotherapy, Donegal Hospice; University of Ulster at Jordanstown*

## *Introduction*

The main focus of palliative care is the patient and their family. It is agreed that the relationship of the professional with the patient and their family is a vital component of delivering care <sup>(1)</sup>. In order for professionals to be attracted to palliative care and remain in this area there may be several motivating factors. However there is little known about the motivation of nurses within a palliative care setting. This project was undertaken as part of a Master of Science in Palliative Care. The stresses of being a professional coupled with the population encountered in palliative care bring their own complications and this research project aimed at identifying factors which would continue to promote motivation in nurses in palliative care.

## *Aims and Objectives*

The objectives of the study were to: understand the strategies used to promote motivation while working in palliative care, explore the processes that nurses use to continue to work in palliative care, examine the relationship between motivation and job satisfaction and identify barriers to the motivation of nurses in palliative care.

## *Methodology*

The research design used was that of an exploratory qualitative approach. The study took place over a one month period. One to one in depth interviews using a topic guide were carried out with a purposive sample of staff nurses (n=7) working in the hospice setting. A focus group interview was conducted with community palliative care nurses (n=7). The data was analysed using the content thematic analysis <sup>(2)</sup>.

## *Results*

Factors that were important to nurses in motivation were the ethos of palliative care, the care of the patient/family, a genuine interest in palliative care and a love for the job. Interventions that promoted motivation were autonomy, time to develop a rapport with the patient/family, a good working environment and self awareness of their own needs.

## *Conclusion*

Motivation for nurses in palliative care is important to engage and maintain staff in this field. Motivation is incorporated in many aspects including job, content, and the work environment, at an organisational level and on a personal level.

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## Utilization of EEG in SGH; Psychogenic Nonepileptic Seizure (PNES)

MS Farid, M Elhanan, N Khan, F Butt, AS Aprjanto, M lee, J Doherty, K Murphy

*Sligo General Hospital*

### *Introduction*

1 % Irish population has epilepsy but it is estimated that 20% of seizure patients seen at specialist epilepsy clinics have PNES. PNES are events superficially resembling an epileptic seizure but without the characteristic electrical discharges associated with epilepsy. Video EEG for five days is gold standard to diagnose PNES.

### *Aim*

Whether prolonged EEG can be used to diagnosis for PNES in carefully selected patients where 5 days video EEG is not available.

### *Methodology*

This is observational study in which we selected all patients suspicious of PNES sent for prolonged EEG less than eight hours in Sligo General hospital between FEB 2008 to Dec 2010.

### *Results*

Out of 15, 13 found to have PNES. 12 were female and 1 male, duration of epilepsy 26.37 months (from 2 month to 11 years), average age 26.39 ( 17 years to 48 years), 11 patients were on antiepileptic drugs, duration of EEG on average was 106.9 minutes ( 49 minutes to 6.5 hours). 11 patients had MRI, 11 had CT brains and 11 had both MRI and CT Brain scans.

### *Conclusion*

If carefully used in selected patients, EEG for short duration can be used to diagnose PNES in places where video EEG monitoring is not available.

# Negative Pressure Wound Therapy in wound Management: A patients' Perspective

Niamh Bolas

*Tissue Viability, Sligo General Hospital*

## *Introduction*

The use of Negative Pressure Wound Therapy (NPWT) in the management of both acute and chronic wounds continues to gain popularity as the clinical evidence to support this therapy increases<sup>1,2</sup>, but the impact of using this therapy on patient's daily lives is poorly understood.

## *Aims & Objectives*

To explore the patients' lived experience of using NPWT by understanding the day-to-day realities of living with NPWT and barriers they encountered.

## *Methodology*

A Heideggerian phenomenological approach to the enquiry was taken. Semi- structured interviews were carried out with 6 purposefully selected participants. Interviews were transcribed verbatim and analysed for themes using Interpretative Phenomenological Analysis (IPA).

## *Results*

Three superordinate themes were identified in this study, altered sense of self, new culture of technology and leading a restricted life. Themes associated with an altered sense of self and leading a restricted life were in keeping with other wound care studies<sup>3,4</sup>. What was unique to this study and helps address the gap in the literature was the patients' experience of living with technology, which brought both hope and anxiety. Identification of barriers such as managing technical difficulties, practicalities of attending to activities of daily living and improved understanding about NPWT for both patient and practitioner can help foster that hope and help reduce anxiety.

## *Conclusion*

This small study was exploratory in nature but does add to the current research on NPWT by adding insight into the lived experience of using NPWT. This in turn may assist practitioners in helping patients' overcome barriers to using this advanced wound healing modality and act as a platform for further studies in this area.

**Recommendations:** holistic assessment of patients' suitability for NPWT, education for patients and healthcare professional on NPWT, utilisation of lighter and quieter devices and inclusion of a technology domain in future HRQoL studies on NPWT.

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# Investigation of Bone Fracture using Experimental Modal Analysis

P. Varley, J. Hession

*Department of Mechanical and Electronic Engineering, Institute of Technology Sligo*

## *Introduction*

A review of census records reveals the number of over 65's in Ireland has increased from approximately 4.5% to 11% of the total population in the last century<sup>1</sup>. With this increase in life expectancy instances of age related diseases such as osteoporosis rise. Consequently it is important that systems are available to monitor the onset of this disease. All materials, including bone possess a physical property called resonance. The value of resonance depends on a material's mass and stiffness. The presence of fracture in a material changes these properties and thus alters the resonance. Experimental Modal Analysis (EMA) is the process of subjecting the material to controlled vibration and measuring the resulting response. From these measurements resonant frequencies can be determined and correlated to fracture.

## *Aims & objectives*

This study aims to investigate the correlation between bone fracture and vibration response in an animal model. A wearable system will be developed to indicate the fracture risk to the person using it. This will improve the quality of life for a person with osteoporosis by allowing treatment to be delivered as early as possible.

## *Methodology*

Healthy un-fractured sheep tibia, minus soft tissue, will be vibrated and the corresponding frequency response measured. Fracture will be incrementally induced and the vibration measurement repeated at each increment. Relationships between fracture and vibration response will be defined.

## *Results*

Preliminary testing has been carried out on mild steel beams to determine the relationship between resonant frequency and mass. A resonant frequency shift of 30Hz was observed for a change in mass of 9 grams. A linear fit through the data resulted in an  $R^2$  value of 0.77.

## *Conclusion*

The results above show a definite shift in resonant frequency as the mass of the structure decreases. This experiment is used as a first step towards vibration measurement of bone and the results provide confidence that vibration can be used to detect bone fracture.

## *References*

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## Supporting Smoking Cessation in Pregnancy

Pauline Kent<sup>1</sup>, Rachel Reilly<sup>2</sup>, Amy McGowan<sup>2</sup>, Leanne Dineen<sup>1</sup>, Mette Jensen Kavanagh<sup>2</sup>, Dr John Williams<sup>3</sup>

1: Smoking Cessation Department, Sligo General Hospital; 2: Research & Education Foundation at Sligo General Hospital; 3: Pathology Department, Sligo General Hospital.

### Introduction

Tobacco use during pregnancy remains the single most preventable cause of perinatal morbidity and mortality<sup>1</sup>. Smoking status is routinely asked for at antenatal clinics, however under-reporting of smoking in pregnancy is well documented<sup>2,3</sup>. In 2008, 11% (201) of pregnant women attending the Antenatal Clinic at Sligo General Hospital reported smoking during pregnancy of which 5.5% (11) agreed to a referral to the Smoking Cessation Service (SCS).

### Aims

The primary aim of this study is to determine the effectiveness of introducing validated smoking status testing and midwife-led brief advice on smoking cessation in increasing the referral rate to the SCS. The study also aims to ascertain the proportion of pregnant women smoking.

### Methodology

All pregnant women (716) aged  $\geq 16$  attending the public Antenatal Clinic at Sligo General Hospital from October 2009 to September 2010 were invited to participate in the study. The Midwife-led intervention involved a combination of urine Cotinine and Carbon monoxide breath testing to ascertain smoking status. The Midwives offered brief advice on smoking cessation and referral to SCS to all pregnant smokers.

### Results

86 (12%) of all pregnant women consented to taking part in the study. In this study group, 49 (57%) were smokers. In total, 114 of all pregnant women were recorded as smokers (16%) [95% CI: 13.2% – 18.6%].

The total number of referrals to the SCS was 64 (referral rate 56%). This corresponds to a 10-fold increase in the referral rate compared to the 2008 figures. (Odds ratio of referral to SCS = 22.1, 95%CI: 11-45)

### Conclusions

The combined interventions of midwife led brief advice and smoking status testing has resulted in a dramatic increase in the referral rate of pregnant women to the SCS.

A key recommendation is the clinical tools in this study should be introduced into routine antenatal care. This is in line with the recommendations in the NICE guidelines "How to stop smoking in pregnancy and following childbirth"<sup>5</sup> published in June 2010.

### Funding:

Research & Education Foundation at Sligo General Hospital

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# Midwives' Experiences of delivering the study 'Supporting Smoking Cessation in Pregnancy'

Pauline Kent, Leanne Dineen

*Smoking Cessation Department, Sligo General Hospital*

## *Introduction*

Tobacco use during pregnancy remains the single most preventable cause of perinatal morbidity and mortality<sup>1</sup>. Training midwives who provide routine antenatal care to give them confidence to raise the issue of smoking in a client-centred non-confrontational, non-judgemental manner has been demonstrated to be a key factor in identifying the percentage of pregnant women who smoke, during routine consultations<sup>2</sup>. 'Supporting Smoking Cessation in Pregnancy' is a research study undertaken at Sligo General Hospital during a 10 month period 2009-2010 involving brief intervention by midwives and measurement of validated smoking status of pregnant women attending the ante natal clinic at Sligo General Hospital.

## *Aim*

The primary aim of this study was to explore the experiences and perceptions of the midwives involved in delivering the study 'Supporting Smoking Cessation in Pregnancy'

## *Methodology*

A qualitative focus group (n=4) was the chosen method of data collection. The focus group discussion was tape-recorded and analysed using thematic analysis.

## *Results*

The following themes were identified during analysis:

1. Information and Awareness of smoking in pregnancy
2. Study Barriers
3. Working Environment
4. Testing Procedures
5. Benefits of the Study
6. Midwives' Perceptions of the Participants

## *Conclusions*

There were clear recommendations identified by the midwives in this study:

- a) A multidisciplinary approach to smoking cessation in pregnancy should be implemented and all team members should receive brief intervention and motivational skills training.
- b) Information on smoking cessation in pregnancy should be highlighted through the media and other channels. In addition, HSE website and posters in the antenatal clinic demonstrating the results of the study.
- c) A clinic should be delivered by the Smoking Cessation Services to co-inside with when the antenatal clinics are operating.
- d) Routine carbon monoxide testing should be carried out in the antenatal clinics for all pregnant women, as recommended in the NICE guidelines (2010)<sup>3</sup>.

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# Population based Study of Patient Outcomes After Permanent I125 Prostate Brachytherapy

RF Lyons, G O Boyle, A Zuchora, FJ Sullivan

*Dept. of Radiation Oncology UCHG.*

## *Introduction*

Prostate cancer is the most common cancer in men in Ireland (excluding NMSC) with 2,750 cases each year. 1 in 12 men will develop prostate cancer by the age of 75. Many treatment options are available for these men, including many different Radiotherapy treatments. Brachytherapy is a form of radiation therapy where radioactive Iodine 125 seeds are inserted into the prostate gland. These seeds then emit their radiation over a set time period targeting the prostate cancer directly.

## *Aims & objectives*

- To review the initial experience of transperineal brachytherapy for prostate cancer.
- To assess the patient characteristics and clinical treatment outcomes.

## *Methodology*

144 consecutive patients received Iodine 125 prostate brachytherapy between January 2007 and July 2009 (31 months).

Information on each patient including:

- Demographics
- Cancer Histopathology (Gleason Score)
- Radiological staging results
- Prostate Specific Antigen (PSA) values pre and post treatment
- International Prostate Symptom Score pre and post treatment
- Operative notes
- Post-op Morbidities/Complications

This information was put onto an online database, 'Oncura Database' that can be used for analysis and management of prostate brachytherapy patients.

## *Results*

The median age of prostate cancer patients was 60.4 years. 61% of patients were low risk patients, with 64% receiving brachytherapy alone. 9% received triple therapy combining brachytherapy, EBRT and hormonal therapy. The international prostate symptom score, a measure of urinary toxicity at 12 months had a median score of 0. Minimal morbidities were reported. Overall survival was 100% and relapse free survival was 99.3%.

## *Conclusion*

Brachytherapy is an effective treatment choice for prostate cancer for low, intermediate and high risk patients. Low PSA levels reflect a positive response to treatment, from this cohort of patients 99.3% have significantly lower post treatment PSA values. Minimal post-op toxicities have occurred in a very small number of patients thus far. Urinary toxicity (IPSS scores) have remained low for 86% of patients and less than 6% have reported any rectal toxicities

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# Effects of Atorvastatin on Nocturnal Sleep and Atorvastatin Prescribing Trends

Bilal S, Shah A, Farooq U, Murray D

*Dept of Medicine, Sligo General Hospital*

## *Introduction*

There have been few case reports and studies highlighting that statins can cause sleep problems<sup>1</sup>. The results of these studies are variable. There have also been comparative studies looking at prescribing statins in the morning versus in the evening to evaluate their efficacy<sup>2</sup>. However, these studies do not look at the associated sleep disturbances<sup>3</sup>.

## *Aims & objectives*

We study the relationship between atorvastatin and sleep problems in our patient population. We observe the prescribing trends, especially in relation to timing of administration and associated sleep problems.

## *Methodology*

Patients attending their routine cardiology follow-up clinic visit from August to September 2010 were included. Patients on atorvastatin were asked to complete a questionnaire about their sleep patterns during their previous month. Four questions were those devised by Jenkins and colleagues<sup>4</sup>. These assessed difficulties with sleep initiation, sleep maintenance and post-sleep somnolence. This was a qualitative rating of sleep. The Jenkins total sleep problem score was calculated by summing the scores for these four questions. A score of 10 or more out of 20 was considered significant. Two further questions were added to this standard questionnaire. Question five asked about the number of nights with vivid dreams or nightmares the patient had during the last month. Question six asked whether the patient felt their average sleep duration was longer, shorter or about the same after going on atorvastatin. The timing of atorvastatin administration was also observed.

## *Results*

Seventy two patients were on Atorvastatin. Thirty five patients had sleep problems out of 72. Twenty five patients had a high Jenkin's scale score and 10 patients had other sleep disturbances. Twenty five patients were taking Atorvastatin in the morning and 13 had sleep problems. Forty seven were taking it in the evening and 21 had sleep problems.

## *Conclusion*

Our study confirms the presence of sleep problems in a significant proportion of our patients on atorvastatin. We also observed that atorvastatin was prescribed in the evening and a majority of patients experienced sleep disturbances. We suggest changing the timing of administration from evening to morning time for these patients. This may help minimise the sleep disturbances and may improve the sleep pattern in those patients who experience sleep difficulties.

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## **General Practitioners' knowledge, attitudes, and practices concerning medical assessments of fitness to drive in older adults: A survey**

Sami Omer, Catherine Dolan, Borislav Dimitrov, Camilla Langan, Thomas Fahey, Geraldine McCarthy

*Old Age Psychiatry, Sligo Mental Health Services*

### *Introduction*

With an ageing population, there is an increasing number of elderly drivers. Legislation in European countries varies, regarding medical assessment of fitness to drive in older people. In Ireland, a medical assessment by a registered medical practitioner is required for renewal of a driving license for those aged 70 and above. The medical practitioner may give a certificate of fitness to drive for either one or three years. The road safety authority provides guidance to medical practitioners to assist them in assessing fitness to drive. However, little is known about opinions and attitudes of medical practitioners towards the assessment process.

### *Aims*

To examine the knowledge, attitudes and practices of GPs in Ireland in relation to medical assessment of fitness to drive in older adults.

### *Methodology*

A postal questionnaire was sent to a randomly selected sample of 603 GPs, GPs received follow-up phone calls to encourage response to the survey. 257 GPs returned questionnaires.

### *Results*

Only 13% of GPs lacked confidence in assessing fitness to drive and 55% of GPs consider themselves most qualified to assess fitness to drive. However, only 26 % of GPs feel they have received adequate training to assess fitness to drive and the majority (88.8%) of GPs feel a screening instrument may be helpful. Moreover, 80.9 % of GPs stated that reporting unsafe drivers will put them in a conflict of interest and 75.1% feel this negatively impacts on the doctor-patient relationship.

### *Conclusion*

This study highlights the need for further training of GPs in this important area of practice and the challenges GPs face in assessing fitness to drive in older adults.

## How 'Sunaware' are North West Farmers

Selene Daly<sup>1</sup>, Dr. D McKenna<sup>1</sup>, Daniel Mahon<sup>2</sup>, Marion O'Boyle<sup>1</sup>, Ann Coffey<sup>1</sup>, Dr. K. Heelan<sup>1</sup>

1: Dept of Dermatology, SGH; 2: Health Promotion Student, IT Sligo

### Introduction

According to the Irish Cancer Society there are over 6,000 cases of skin cancer every year in Ireland. It has long been established that people who work outdoors and are overexposed to Ultraviolet Light (UV) have an increased risk of developing skin cancer (Cancer Research U.K.2008)

### Aims and Objectives

- To determine how many times farmers have sustained sunburning
- To ascertain if farmers practiced the 'sunsmart' code when exposed to UV light. This would include applying a high factor sun filter, wearing protective clothing such as a hat long sleeves and sunglasses and seeking shade during 11 – 3p.m.
- To determine if age, gender or marital status influenced safe sun exposure habits

### Methodology

- A questionnaire which asked questions regarding 'Sunsmart' behavior was distributed among farmers involved in the Irish Farmers Association and at local marts in the North West.
- The survey consisted of 14 questions which allowed for the breakdown of gender, age group and 'Sunsmart' behavior
- Data was analyzed using SPSS/PASW
- The focus of the analysis centered on whether farmers were 'sunsmart'

### Results

Almost 90% of respondents reported being sunburnt in their lifetime with over 1/3 being significantly burnt several times. No difference was found between age ranges, gender or marital status and the number or frequency of sunburns

Only 6% of respondents regularly covered up with suitable clothing including hats and sunglasses, when exposed to UV

18% of respondents never practiced any preventative measures when outdoors

94% of those surveyed were deemed 'Sunsmart' were female

### Conclusion

This study shows that farmers have sustained dangerous levels of UV light.

It shows that younger farmers are more 'Sunsmart' than older ones

Females engage more 'Sunsmart' behavior than males

More studies of this type are needed to gather more information with regard to prevention of skin cancer

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## **Epidemiology of Facial Injuries in the West of Ireland**

Sinead Byrne<sup>1</sup> Tom W M Walker<sup>2</sup> Patrick J McCann<sup>2</sup> Michael J Kerin<sup>3</sup>

*1: Medical Student, National University of Ireland, Galway; 2: Department of Oral & Maxillofacial Surgery, University Hospital, Galway; 3: Professorial Surgical Unit, National University of Ireland, Galway*

### *Introduction*

The pattern, presentation and volume of facial injury in the west of Ireland is subjectively different to that in the United Kingdom. There has been no prospective regional study of facial injury in Ireland to date. No system exists to collect data nationally on injuries.

The epidemiology of facial trauma is important in service development, clinician education and training, European working time directive as well as in prevention.

### *Methodology*

A multi centre prospective data collection study was undertaken for one week. All emergency departments in the West of Ireland were involved. All patients attending with facial injuries were included, injuries solely of the scalp and neck were included.

The proforma recorded demographic information, details of injury, presentation, relationship with sport, alcohol and animals as well as treatment and follow-up.

### *Results*

Facial injury is significantly more common in the west of Ireland than the UK. The previously suspected strong relationship with alcohol does not hold in this region, as sport is the most common cause. There are significant differences in the age group presenting with facial injury, location of injury, day and time of presentation and aetiology.

### *Discussion*

The reasons for the difference between the UK and Ireland will be discussed. The potential effect of compulsory helmets in hurling may affect this data. The current consultant man power in OMFS is insufficient to service the volume of this trauma. Emergency Department staff will need training in this area, given the large proportion of facial trauma in the region.

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# Forgotten Grievers: An Exploration of the Grief Experiences of Bereaved Grandparents

Tom O'Grady, Ursula Gilrane

*St. Angela's College (NUIG), Lough Gill, Sligo*

## *Introduction*

Current knowledge about bereavement is derived from experiences of survivors in traditional societal roles of spouse, parent or child. A paucity of studies ensures that little is known about grief of grandparents.

## *Aims and objectives*

The aims of this national study were to identify and describe the bereavement experience of grandparents following the death of their grandchild and to explore the needs of and supports for grandparents throughout this experience. A qualitative exploratory descriptive design was employed.

## *Methodology*

Upon receipt of ethical approval, a multi-pronged sampling strategy was employed. Seventeen persons participated in in-depth interviews. Data was subjected to thematic field analysis through NVIVO.

## *Results*

Previous literature noted that grandparents experience 'double pain', meaning that they concurrently experience feelings of loss for their grandchild in addition to observing the pain of their own adult child's grief (Gerner, 1990; Reed, 2000). However, our findings revealed that grandparents experience '*cumulative pain*' i.e. in addition to 'double pain'; they also experience pain from other sources. This study found that the resolution of this pain can be either '*inhibited*' or '*facilitated*' by a broad range of factors that take place before, at the time of or following the death.

## *Conclusion*

There is a need for bereaved grandparents to be recognized, acknowledged and supported by healthcare professionals and society in general.

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## **Students' perceptions, experiences, attitudes, and knowledge of suicide**

O Grady, T. Healy, D. Cooke, M. Dolan, Dolan, S. Jackson, C. & Glacken, M

*Department of Nursing & Health Studies; St, Angela's College, Lough Gill, Sligo*

### *Introduction*

The Irish suicide rate<sup>1</sup> continues to rise with the largest group being young people. It is therefore imperative that their knowledge, perceptions and attitudes to suicide are known so that interventions that promote positive mental health will ultimately reduce this rate.

### *Aims & objectives*

1. To discover the perceptions and experiences students' have regarding suicide.
2. To determine students' attitudes and knowledge of suicide.

### *Methodology*

A mixed method approach was used. Objective 1 was achieved through the generation of data via a series of focus group interviews with a volunteer sample (n= 28) of undergraduates. Data was analysed thematically. Objective 2 was achieved through the employment of a cross sectional survey. Census sampling was conducted which yielded a fifty-nine percent response rate (n=217). Attitudes were measured using the ATTS<sup>2</sup> and a study specific knowledge questionnaire. SPSS was used to manage and analyse the data.

### *Results*

Qualitatively, students perceive suicide as stigmatizing, primarily influenced by their families and communities. Tacit acknowledgement of suicide appears to be the norm. Quantitatively, students' knowledge of suicide is relatively good with deficits noted in knowledge regarding rates and groups particularly vulnerable. Students perceived civic responsibility towards assisting someone with thoughts of suicide. They believed that this assistance could be beneficial. They did view suicide as the individual's right. In contrast to the silence spoken about in the focus groups the majority felt that open discussion of suicide should occur.

### *Conclusion*

A culture of openness around suicide needs to be nurtured by families, communities and the primary/secondary educational system. At third level, a strategy for promoting students' perceived civic duty to intervene when a possibility of suicide presents; the furnishing of students with the skills to assist persons with suicidal thoughts (e.g. ASIST); enhancing students' knowledge about incidence; risk groups etc and the development of a campus model for suicide prevention are required.

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