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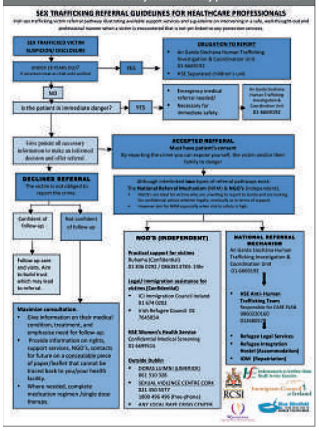
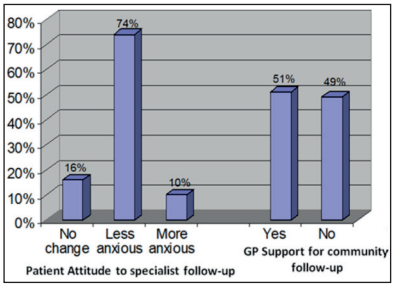
In this Month's IMJ

Sex trafficking in Ireland from a health care perspective: McConkey et al point that there were 78 alleged victims of sex trafficking in 2010 and that this yearly level has been maintained. The potential identifying indicators are an international migrant, physical signs of trauma, poor nutrition, fearful, lack of any English, accompanied by a minder/captor. The authors have devised a referral pathway.

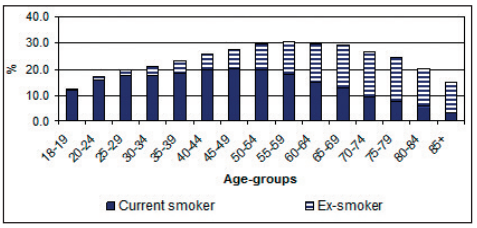
Table 4 Irish sex trafficking victim referral pathway illustrating available support services and a guideline on intervening in a safe, well-thought-out and professional manner when a victim is encountered that is not yet linked to any protection services.



Follow-up arrangements for breast cancer patients: is it appropriate to transfer surveillance to general practitioners? Kerrigan et al surveyed 101 low risk cancer patients and 81 GPs. The patients had a high level of confidence in GP follow-up 67%. The GPs were almost equally divided in their willingness to take on this surveillance.



An analysis of the recording of tobacco use among inpatients in Irish hospitals: Sheridan and Howell point out that the most recent data on the prevalence of cigarette smoking in Ireland indicates a figure of 21.7%. Hospitals admissions are an opportunity to identify smokers and offer help to quit. This paper found that 24.6% of inpatient records made reference to whether the patient was a smoker. Greater efforts should be made to ascertain the smoking status of all hospital patients as cessation advice could be given.



The incidence of childhood type 1 diabetes in Ireland and the national childhood diabetes register: Roche et al found that there were 248 new cases of type 1 diabetes in children in 2008 and 241 cases in 2009. In 1997 the incidence of type 1 diabetes in children was 16.3/100,000 and by 2008 it had increased to 27.5 per 100,000. The male to female ratio was 1.19:1.

Table 1 Age- and Sex- Category of Incident Cases and population data in 2008 and 2009

Sex	Age (years)	2008 Incident Cases	2008 Population (persons)	2009 Incident Cases	2009 Population (persons)
Males	0-4.99	34	165,907	33	171,440
	5-9.99	45	156,282	50	158,514
	10-14.99	56	145,294	40	149,240
	0-14.99	135	467,483	123	479,194
Females	0-4.99	27	158,100	32	163,787
	5-9.99	42	149,956	41	152,167
	10-14.99	44	137,852	45	141,233
	0-14.99	113	445,908	118	457,187
Total	0-14.99	248	913,391	241	936,381

Thromboprophylaxis in myeloma: what is happening outside of clinical trials: Crowley et al point out that plasma cell disorders such myeloma are associated with an increased risk of thromboembolism. This paper finds that there is wide variation in practices related to thromboprophylaxis in patients with myeloma. Less than half of those surveyed are using thromboprophylaxis guidelines.

Table 1 Haematologists perception of the burden of VTE in patients with myeloma

Percentage of Patients with VTE	Number of Respondents	Percentage of Respondents
<5%	13	46.4%
5-9%	6	21.4%
10-19%	8	28.6%
20% and over	0	0%
No data	1	3.6%
Total	28	100%

Table 1 Comorbidity and Complication prevalence in hip fracture patients suffering in-hospital mortality

Systemic Comorbidity	No. (% of Total Cases)
Cardiovascular	104 (81.9)
Endocrine	33 (26.0)
Gastrointestinal	40 (31.5)
Genitourinary	41 (32.3)
Malignancy	21 (16.5)
Neurological	39 (30.7)
Psychiatric	41 (32.3)
Respiratory	66 (52.0)
Sepsis	18 (14.2)
Vascular	40 (31.5)
No. of Comorbidities:	
0	5 (3.9)
1	7 (5.5)
2	12 (9.4)
3	25 (19.5)
≥4	79 (61.7)
Systemic Postoperative Complications	**No. (% of Total Cases)**
Cardiovascular	44 (34.6)
Endocrine	0 (0)
Gastrointestinal	33 (26.0)
Genitourinary	40 (32.5)
Malignancy	0 (0)
Neurological	0 (0)
Psychiatric	3 (2.4)
Respiratory	60 (47.2)
Sepsis	21 (16.5)
Vascular	10 (7.9)
No. of Complications:	
0	10 (10.6)
1	13 (13.8)
2	17 (18.1)
3	15 (16.0)
≥4	39 (41.5)

Characterization of comorbid factors in hip fracture related in-hospital mortality: Athar et al found that the average number of co-morbidities among hip fracture patients at the time of admission was 4.6. The average number of post-operative complications was 3.0. The paper included 2,108 hip fractures. The authors place emphasis on the American society of Anesthesiologists (ASA) score which is predictor based on factors such as age, gender, mental functioning, mobility, time to surgery, and medical status.

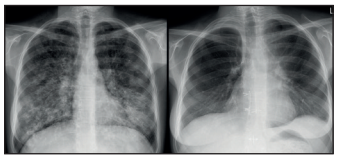
Clinical guideline adherence by physiotherapists working in acute stroke care: Donohue et al surveyed physiotherapists about stroke care. A total of 23 physiotherapists, mostly senior, responded. Compliance with the stroke guidelines was greater than 80%. The provision of early assessment was less satisfactory 43.5% related to week-end admissions and late referrals.

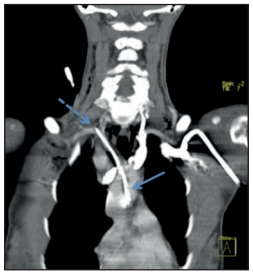
Table 1 Characteristics of Respondents (N=23)

Characteristics	N	%
Physiotherapy Grade:		
Senior Grade	18	2
Acting Senior	3	78.3
Staff Grade	8.7	13
Years since qualified		
5 to 10	13	56.5
11 to 15	5	21.7
More than 15	5	21.7
Years of experience with Stroke Patients		
Less than 1	1	4.3
1 to 4	10	43.5
5 to 10	10	43.5
11 to 20	2	8.7
Highest Qualification		
Undergraduate Qualification (Degree/Bachelor)	17	43.5
Postgraduate Diploma	1	43.5
Masters Degree	5	21.7

The at-risk medical student – what more can we do? Maher et al report that the attrition rate at UCC medical school was 5.7% (2001-2010). The key factors are change of mind, academic problems, and psychological or physical ill-health. Overseas students are more vulnerable. The authors map out a pathway to support the vulnerable student.

First bilateral lobar lung transplant in Ireland: Advanced operative strategies in lung transplantation: Shah et al describe the placement of bilateral lobar lung transplants in a 24 year girl with end-stage cystic fibrosis. She tolerated the procedure well and was discharged after 2 weeks.





Inadvertent subclavian artery cannulation with a central venous catheter; successful retrieval using a minimally invasive technique: Redmond et al describe how inadvertent subclavian artery cannulation can be managed with an Angio-Seal TM device.

The European Working Time Directive and the Place of Opt-Out

The EWTD for trainee doctors was fully implemented in the UK in 2009 and it has now been introduced in many hospitals in Ireland partially or completely since 2013. The UK has a long experience of the system. The EWTD became an important consideration for the NHS in 1996 and was implemented in 1998. Junior hospital doctors' hours were reduced to 56 hours in 2006 and further still to 48 hours in 2009. By 2011 there was full compliance.

Those working in acute specialties in Irish healthcare are beginning to understand the challenges that EWTD poses for both training and the delivery of services. The core points in the EWTD accord are at least 11 hours rest in every 24 hours and not more than 48 hours work /week averaged over 6 months. These regulations don't fit easily into the 24/7 nature of medical practice. Surgical trainees have lost 3,000 hours of training. These concerns were the catalyst for the UK report 'The implementation of the working time directive and its impact on the NHS and health professionals' March 2014. The key considerations in this wide consultation document on EWTD were patient care, doctor fatigue, recognition that different specialties have been affected differently, rota design, the concept of flexibility with the possibility of opt-out, and trainee contracts that distinguish between service and training.

EWTD has led to anxiety and frustration because of the complex and antisocial rotas needed to maintain compliance. Clinical exposure and procedural opportunities has been significantly reduced for junior hospital doctors. The impact has been most acutely felt in craft specialties, such as surgery and intensive care which require a high level of technical proficiency. While the EWTD has had a beneficial impact in reducing fatigue among NCHDs, it has introduced an inflexibility which impacts negatively on training. The UK taskforce report[1] on the impact of the EWTD was published on 3 April 2014. The Report accepts the negative impact that EWTD has had on training and patient care in some specialties. It proposes that one option is to separate the training and education of doctors from their work on the wards and theatres. A further and more controversial proposal in the Report is that junior doctors should be encouraged, in some specialties, to use their right as an individual to opt out of the current restricted hours.

The RCPI in its position paper on EWTD Sept 2013 was strongly supportive of the reduction of NCHD hours. It outlined a number of fundamental principles that must form the basis of any agreement. Patient care must be the main object and should not be compromised. Professional training and development must be maintained. The post-take ward round should be preserved as the main focus for consultant-led professional communication on the continuity of patient care. The reduction in hours will require additional medical staff. There needs to be an awareness about adverse unintended consequences. One of the concerns is that EWTD will lead to 'work compression'. This is about doctors doing more in less time for more and sicker patients. There is the possibility that time-pressured trainees would initiate excessive testing of patients rather than taking complete histories and performing clinical examinations.

The statement of the Royal College of Surgeons of Edinburgh reflects the concerns of a craft specialty. Its report expresses the view that continuity of care now lies completely at the level of the consultant. The shift system makes it difficult for the trainee to follow patients through their journey in both acute and chronic settings. The expansion of middle tier doctors and the dilution of the experience has resulted in the consultants' roles being increased to compensate for the gaps in service. The Report points out that the EWTD has had a huge effect on the working lives of consultant surgeons. There now needs to be an increased consultant presence at all times although consultant numbers have not increased. It is now commonplace for consultants to cancel all elective commitments when they are on-call. Many departments now have one consultant who is consistent and available on one week rotas to ensure patient continuity.

Junior doctors have less time to train and less time to learn. A survey conducted by the Royal College of Surgeons of England reported that the average junior surgeon now receives 8,000 hours during training compared with 30,000 before the introduction of the EWTD. In order to make up for the reduced on-the-job exposure, doctors training would need to be extended by a further 2 years. The RCSE suggests that the distinction between training and service, which were previously closely linked, will now have to be re-explored. Trainees need to be rotated through high volume surgical departments where the level of clinical exposure can compensate for the shorter hours. It is pointed out that the EWTD may need to be re-interpreted in certain circumstances, for example in France surgical trainees are excluded from the EWTD process.

The Royal College of Paediatrics and Child Health in its November 2013 report stated that acute specialties are safer on 48 hours rotas. It supports a model of consultant delivered care in which the service reconfiguration concentrates senior staff and trainees on fewer sites. The document continually refers to the aspiration of consultant delivered care (CDC). The CDC model differs from the current consultant led care (CLC) model. In CDC the consultant is directly responsible for the care that the child receives rather than supervising the delivery of this care by others. The RCPCH is against any potential derogation beyond the 48 hour working week because it is not likely to benefit training. The extra time is likely to be used to maintain small hospital services where junior doctors will be deployed for service provision only.

The EWTD provisions for NCHDs is an important advance in their working lives. It reduces the risk of fatigue and provides a better work-life balance. It does confront trainees with important challenges. Their clinical exposure and opportunities to undertake supervised technical/surgical procedures are reduced on 2 grounds. Firstly due to the reduction in their working hours and secondly the increase in the number of junior doctors in order to make the rotas compliant. Liptrot[2], a specialist trainee in surgery in the UK, has recently pointed out that the solution is a restoration of the apprentice model of training and a change in the relationship of trainees with hospital trusts. She feels that the protection afforded by the EWTD must not be abandoned.

In summary there is a wide consensus that the EWTD is here to stay. However it needs to be developed and improved as a vehicle for training. Key words that continually come up in discussion documents are- patient continuity, eradication of fatigue, rotas that are tailored to the trainee's needs, and greater flexibility for craft specialties.

JFA Murphy
Editor

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Acute Haematogenous Osteomyelitis in Children

Osteomyelitis is inflammation of bone caused by pyogenic organisms accounting for approximately 1% of all paediatric hospital admissions[1]. It may present as general malaise, often preceded by an episode of otitis media or pharyngitis, with fever and a raised white cell count. Alternatively, it may present insidiously with no other symptoms.[2] Accordingly, a high index of suspicion for osteomyelitis paired with a detailed knowledge of its history is paramount in the early management of this condition. Incidence of osteomyelitis in boys is approximately twice that in girls.[3] Half occur in children older than five years of age and half in those younger than five, being particularly common in children under one year old.[3] Neonatal osteomyelitis has two distinct varieties. The first presents at between 2-8 weeks old, with lack of movement or a visible swelling in a limb. The second is often seen in the neonatal ICU in a low birth-weight baby. MRSA osteomyelitis is particularly high in this group[4]. 93% of children and 78% of neonates will present with uni-focal symptoms. The remainder display multiple sites of infection. Overall incidence of osteomyelitis is increasing. A recent US study reported a 2.8 times increase in the incidence of the disease over the past twenty years[5].

50% of children who develop osteomyelitis have no risk factors. 30% have suffered recent minor trauma and 20% arise from a subset of children whose pre-existing condition raises the likelihood of development of the disease[6]. These include immuno-compromised children such as those with diabetes, malignancies or HIV. Premature infants, those exposed to invasive procedures or frequent venesection are also particularly susceptible. A systematic review evaluating symptomatology involving 12,000 patients found that 81% presented with localised pain, 70% with swelling and erythema, 62% with fever, 50% with reduced joint movement and 49% with a limp[7]. However, children may present exclusively with irritability or refusal to use a limb. The femur (27%) and the tibia (26%) are the predominantly affected sites. Osteomyelitis is also typical in the pelvis (9%), foot (8%), humerus (8%) and the spine (4%)[7]. A high index of clinical suspicion is very important in making an early diagnosis of acute haematogenous osteomyelitis. Erythrocyte Sedimentation Rate (ESR) and C-reactive protein (CRP) are valuable diagnostic indicators with sensitivities of 91% and 81% respectively[7]. Importantly, only 36% have a raised white cell count (WCC) on presentation[7]. Bone aspirate cultures are positive in 70% with osteomyelitis, while blood cultures have a yield of 50%. Where possible, specimens should be taken prior to the commencement of antimicrobial therapy. However, this should NOT delay the administration of antimicrobials in septic patients.

While most will have plain radiographs on admission, skeletal changes are generally not visible before day 5[3]. Although computed tomography (CT) is excellent at delineating subtle osseous changes, its role in haematogenous osteomyelitis is limited. Bone scans, especially in younger children who cannot verbalise the site of pain, are particularly useful. They offer a valid alternative to MRI with sensitivity of 73% - 100%, specificity 73%-79%[8]. Ultrasound, although useful in the visualisation of sub-periosteal collections, has a limited role in the diagnosis of osteomyelitis[8]. Magnetic Resonance Imaging (MRI) is the preferred imaging modality with a sensitivity of 82% - 100%, specificity 75% - 99%[3]. It allows accurate localisation of the disease and a detailed evaluation of the surrounding soft-tissue structures. A causative pathogen is not identified in up to 55% of cases of childhood osteomyelitis[9]. *Staph Aureus* is the most common pathogen responsible for acute osteomyelitis in children and can be cultured in up to 90% of positive cases[10]. *Strep Pyogenes, Strep Pneumoniae* and Gram-negative organisms are also implicated. Historically, *Haemophilus Influenzae* was commonly responsible, but is now rare since the establishment of the vaccination programmes in the 1990's[9]. Of late, MRSA is estimated to be culpable in 9% to 30% of cases[11]. MRSA osteomyelitis may be more aggressive and complex, with prolonged hospital stay compared to other pathogens[11].

Optimal treatment of haematogenous osteomyelitis in children is multidisciplinary. With early and targeted treatment, mortality has fallen to less than 1%. Prompt communication between GP's, Emergency departments, Orthopaedics, Microbiology and Radiology is imperative. This approach has been shown to produce more efficient clinical investigations, fewer changes to anti-microbial therapy, lower admission rates and shorter hospital stays. Initial empiric antimicrobial therapy is advised. Flucloxacillin or a cephalosporin, targeting *Staph Aureus*, has been recommended by the British Society for Children's Orthopaedics. In the US, Clindamycin is more commonly utilised. Supplementary MRSA cover should be added if the child has significant risk factors such as previous colonisation or if more than 10% of *Staph Aureus* isolates are methicillin-resistant[10]. Definitive therapy should ultimately be guided by culture results.

Treatment of acute haematogenous osteomyelitis is with 4-6 weeks of targeted anti-microbials. Recent randomised-controlled studies have suggested that 20 days is acceptable[12]. However overall, there is insufficient evidence to alter the current recommendation of at least 4 weeks. Parenteral therapy is continued until an appropriate clinical and laboratory response has occurred, at which time oral antimicrobials can be considered[13]. The duration of intravenous antimicrobials varies from 3 to 14 days[13]. Chronic osteomyelitis seems to correlate with length of antimicrobial treatment with up to 19% of those treated for 3 weeks or less developing chronic osteomyelitis, compared to 2% in those treated for longer than 3 weeks[14]. The role of surgery is now reserved for treatment of complications such as abscess formation or in failure of medical management. Routine exploration is no longer recommended. Early and effective anti-microbial treatment is associated with excellent outcomes and negligible long-term sequelae.

Polymerase Chain Reaction (PCR) can identify rare pathogens, is more sensitive and is quicker than conventional culture mediums[1]. Furthermore, early evidence suggests that serum procalcitonin enables differentiation between osteomyelitis and other diseases such as trauma or soft tissue infection. PET-CT scanning has been described as superior to MRI in monitoring response to treatment of osteomyelitis as it offers improved differentiation between ongoing infection and reparative activity[15]. However, exposure to radiation and limited availability reduces its practical use.

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Sex Trafficking in Ireland from a Health Care Perspective

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Abstract
Sex trafficking within Ireland is a hidden phenomenon. In 2010, 78 alleged victims were reported to An Garda Síochána and the recorded levels of human trafficking into Ireland have remained at this level for the last four years. Despite this, no Irish guidelines or referral pathways exist to assist health care professionals. This paper highlights that health care professionals are not aware of this occurrence nor have they been trained to identify victims. Due to a lack of awareness many potential opportunities to detect these victims may be missed. While there is no single set of symptoms or signs that differentiates sex-trafficked victims from other sex workers, an awareness of common physical and psychological health problems associated with sex trafficking by health care professionals may increase victim detection rates. This paper summarises indicators, approach mechanisms, screening questions and a referral guideline relevant to the Irish health care system[1]. This step-by-step guide can be used by health care professionals who encounter such a situation.

Introduction

Sex trafficking is a hidden phenomenon. Victims usually have poor access to healthcare and thus may only present when their medical situation becomes severe or life threatening. Although sex trafficked victims are less likely to use health and social services than non-trafficked sex workers[2], the data from other countries indicate that victims may present to various healthcare settings: within the asylum process, outreach services for prostitution or migrant groups and sexual assault units. One study found that 28% of victims had access to a healthcare provider while still in captivity, however the fact that they had been trafficked went undetected[3]. This illustrates the potential opportunity for intervention by health care professionals if they are equipped with the knowledge of the indicators, appropriate approach mechanisms and screening questions associated with sex trafficking. This demonstrates the need for an awareness raising and training programme amongst health care professionals[4]. Many obstacles are responsible for the silence of these women. If health care professionals are aware of these barriers, they can ensure that these victims are informed of all the relevant referral pathways and support services in place in Ireland which enable them to make an informed decision[5].

Methods

A review was conducted to address the following topics (1) the migrant sex trafficking epidemiology in Ireland and the Irish response; (2) to determine if under-detection of victims is occurring within the Irish health care system; (3) availability of Irish educational and training resources for health care professionals; (4) indicators, screening questions and approach mechanisms to be used in a health care setting for sex-trafficked victims' identification; and (5) sex-trafficking referral resources available in Ireland for health care providers and the possibility of implementing a guideline. A literature review on sex-trafficking in migrants was conducted. The PubMed database was searched using the following keywords: sex trafficking AND female AND humans. We categorised material into three themes; indicators, approach and screening questions. The systemic search was expanded to include grey literature (keywords: sex trafficking and health care professional.) and a backward literature review. Semi-structured interviews were conducted with five key health professionals, from acute care, NGOs, and from state agencies in order to (1) relate our quantitative literature to the Irish context; and (2) to construct referral pathways to be used by health care professionals. Some informants declined interviews stating lack of knowledge which is a result in itself.

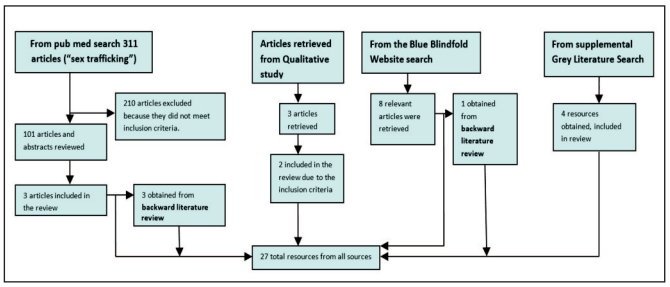


Table 1: Flow Chart Summary of Resources

Results

The Irish Situation

Before the introduction of The Criminal Law (Human Trafficking) Act 2008, Ireland was ill-equipped legally, politically and in terms of service provision to deal with this emerging phenomenon[6]. Since then, a National Referral Mechanism (NRM) and four dedicated state units have been setup. A sixty day recovery and reflection period for suspected victims of trafficking and six months Temporary Residence Permission (renewable) exist conditional on participation with authorities[7]. Estimation of the prevalence is problematic due to the criminal nature of sex-trafficking and its overlap with the related activities of prostitution and illegal immigration, and due to the extreme fear which makes disclosure by a victim unlikely[8]. In 2010, 78 alleged victims were reported to An Garda Síochána and the recorded levels of human trafficking into Ireland have remained at this level for the last four

years[7]. Sexual exploitation is the most common form of human trafficking with 70% of cases reported to authorities. Women constitute the majority of victims. The most prevalent countries of origin were Eastern Europe, Nigeria, other parts of Africa, South America and Asia[7]. The "2009- 2012 National Action Plan" by the former Department of Justice, Equality and Law Reform recognised the need to provide awareness raising training to frontline healthcare providers[10]. It identified the Irish College of General Practitioners (ICGP) to develop a training programme. Development of training resources have been implemented for law enforcement and airline staff and for secondary school teachers[9] however to date this effort has not extended to health care professionals. In September 2010 a healthcare publication for General Practitioners (GP) and a series of leaflets and information cards were sent to 2400 GPs around the country[10].

Table 2 Summary of health risks and consequences of being trafficked

Health Risks	Potential Consequences
Physical abuse, deprivation	Physical health problems, including death, contusions, cuts, burns, broken bones
Threats, intimidation, abuse	Mental health problems including suicidal ideation and attempts, depression, anxiety, hostility, flashbacks and re-experiencing symptoms
Sexual abuse	Sexually transmitted infections (including HIV), pelvic inflammatory disease, infertility, vaginal fistula, unwanted pregnancy, unsafe abortion, poor reproductive health
Substance misuse Drugs (legal & illegal), alcohol	Overdose, drug or alcohol addiction
Social restrictions & manipulation & emotional abuse	Psychological distress, inability to access care
Economic exploitation Debt bondage, deceptive accounting	Insufficient food or liquid, climate control, poor hygiene, risk-taking to repay debts, insufficient funds to pay for care
Legal insecurity Forced illegal activities, confiscation of documents	Restriction from or hesitancy to access services resulting in deterioration of health and exacerbation of conditions
Occupational hazards Dangerous working conditions, poor training or equipment, exposure to chemical, bacterial or physical dangers	Dehydration, physical injury, bacterial infections, heat or cold exposure, cut or amputated limbs
Marginalization Structural and social barriers, including isolation, discrimination, linguistic and cultural barriers, difficult logistics, e.g. transport systems, administrative procedures	Unattended injuries or infections, debilitating conditions, psycho-social health problems

Note: This table was adapted from: "Caring for Trafficked Persons: Guidance for Health Providers" by the International Organisation for Migration, London school of Hygiene and Tropical Medicine and UN Global Initiative to Fight Human Trafficking

Identification

Health care professionals are not aware of this occurrence nor have they been trained to identify victims. Many declined interviews citing lack of knowledge and awareness. Currently existing awareness and training strategies are not tailored to the health care system. Therefore we have created a list of indicators and victim approach advice that is tailored to Irish health service providers. Based on an IOM publication, two tables were adapted taking into consideration the Irish support services available. All indicators should be considered cumulatively[11]. No single set of symptoms or signs differentiates sex-trafficked victims from other sex workers. However, by being aware of the common physical and psychological health problems associated with sex trafficking health care professionals can increase victim detection rates. Screening questions are used to establish whether the definition of trafficking is satisfied[12], and all questions should be tailored to the victim's health[13].

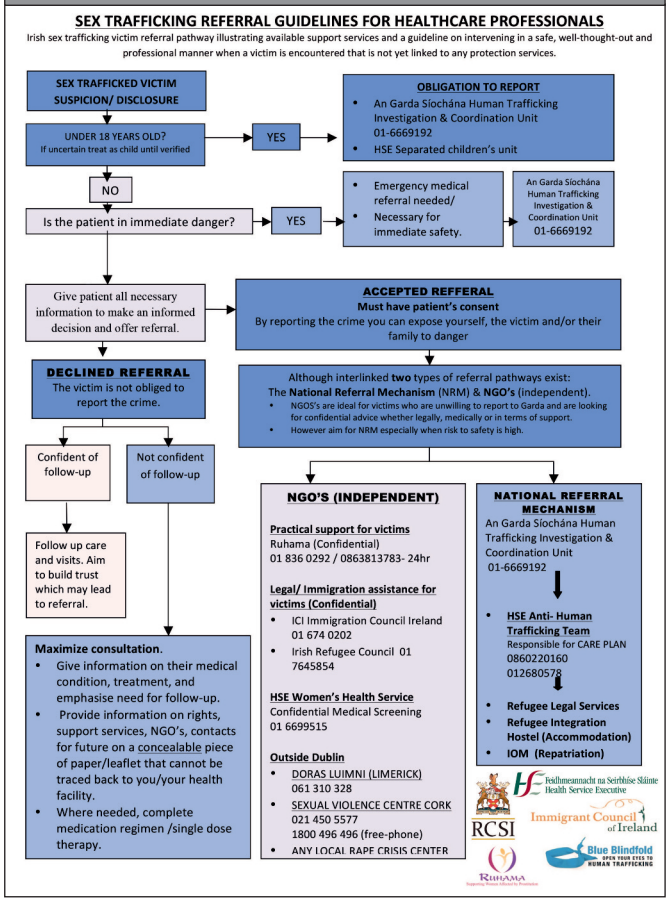
Resources

An in-depth understanding of the sex-trafficking referral pathways available in Ireland was gained. No Irish guidelines or referral pathways existed to assist health care professionals. The safety of each party must be prioritized. Due to security risks rescuing the patient at a particular time may be impossible, but other options are available to assist a patient even if you never encounter them again[13]. All decisions should be made with a patient's informed consent, engaging the patient in the decision making and educating them on all the available options. One should not coerce a patient into a referral but recommendations can be made to victims to seek an anonymous and comprehensive analysis of their situation in order to make an informed decision. However when children are potential victims of sexual abuse disclosure is mandatory[14]. Within Ireland two referral pathways exist, the National Referral Mechanism (NRM) and non-governmental

Table 3 Indicators and Victim Approach Advice adapted from Caring for Trafficked Persons: A Guide for Health Providers - IOM, UN.GIFT and London School of Hygiene and Tropical Medicine

INDICATORS	• International migrant • Job sector associated with trafficking • Physical signs/symptoms: trauma, reactions, injuries, illnesses/infections • Poor nutrition, hygiene and lack of health care • Fearful, mistrust, anxious • Do not speak local language • Legal issues/immigration issues • Minder/captor (may accompany to serve as translator)
APPROACH MECHANISMS	• Safety (patient, yourself, health facility) • Alone, suggest private exam required. • Do not make promises you cannot keep. • Try to get an interpreter. Try to avoid asking anyone accompanying the patient to assist with interpretation/ examination, even if they speak the same language. Use a telephone translation service. Ensure a private consultation. • Ask the patient whether he/she feels safe to talk about things that may be bothering him/her at this time. • Always ask your questions in relation to the patient's health and in the simplest way possible. • Note: Some victims are unaware that they are a victim of a crime. Their rights and support services need to be explained to them.

Table 4 Irish sex trafficking victim referral pathway illustrating available support services and a guideline on intervening in a safe, well-thought-out and professional manner when a victim is encountered that is not yet linked to any protection services.



organizations (NGOs) but they often overlap and are interlinked. State support is available through the NRM, which is conditional on collaboration with investigations. There are a number of NGOs which provide services to victims of trafficking that are non-conditional and confidential and can be used when victims do not want to report the crime for particular circumstances. In Ireland at present people seeking asylum that are also sex-trafficked are not eligible for the same services that non-asylum seeking victims receive.

Discussion

The lack of awareness and training for victim identification and referrals may exacerbate the under-detection of sex-trafficked victims within the Irish health care system. There are many barriers that prevent these women from reporting the crime to health care professionals: threats to the victims' family, fear or coercion from traffickers, distrust of authority due to past experiences with corrupt systems within their country of origin and also lack of information on their rights and support services available. The time constraints in clinical consultations may not allow sufficient time to develop trust, an essential component of disclosure. Health care professionals tend to focus on the presenting complaint, possibly missing other indicators and deliver healthcare without tailoring their service to the needs of this vulnerable group[5].

Educating healthcare providers to identify, assess, and intervene appropriately on behalf of sex-trafficked victims is critical to provision of a comprehensive anti-human trafficking response, and has not been done in this country to date. Victims' needs vary and the complexity of each situation is acknowledged in this Guideline (Table 4). Health care professionals should be aware that safety is the primary consideration when dealing with victims of human trafficking. Recognising a victim is only the first step and training is necessary on the different referral avenues available, without compromising both safety and ethical principles. While intervention can be beneficial, making the wrong referral decisions can result in unintended consequences, often causing further damage to victims[13]. Entrance to the NRM is conditional on the patient severing all ties with the trafficker and assisting with investigation. An Garda Síochána have been appointed the first point of contact in the NRM as they are specialized to investigate the validity and in risk assessment. The complexity of situations varies and some victims make the informed decisions not to disclose. Assigning An Garda Síochána as the first point of contact to the NRM may, however, prevent victims from coming forward. The Care Plan constructed by HSE Anti-Human Trafficking Unit (AHTU) consists of 8 categories to fully support the victims towards recovery. If in doubt, health care professionals can refer directly to HSE AHTU who will then activate the referral cascade and contact An Garda Síochána. Having leaflets and information readily available in different languages with contact information can enable health care professionals to deliver contact information discretely to patients.

This research was limited to migrant sex trafficked female adult victims and did not include domestic sex-trafficked victims, nor males and minors. It did not include already identified victims. Thus future research is needed for these population groups. The under-detection of victims of sex-trafficking is a real issue in Ireland and an awareness raising and comprehensive training exercise should be implemented for health care professionals. The referral guideline presented here could be distributed widely to health care professionals within Ireland to enable them to respond and refer appropriately.

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Follow-up Arrangements for Breast Cancer Patients; is it Appropriate to Transfer Surveillance to General Practitioners?

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Abstract
The aim of this study was to examine the evidence for hospital follow up of breast cancer survivors and to identify patient preferences for hospital or community follow-up. We surveyed General Practitioner attitudes towards community follow-up and quantified the incidence of new or recurrent cancers within a patient cohort to identify their primary symptoms and thus cancer detection in the community. A 22 item questionnaire was distributed to 101 breast cancer survivors from a cohort of 921 treated patients. A 9 item questionnaire was distributed to 81 General Practitioners. Patients are reassured by hospital outpatient appointments, n=63 (74%) but have high levels of confidence in General Practitioner follow-up, n=57 (67%). General Practitioners are equally divided regarding their support for the transfer of follow-up (51%,49%). Ten of the 14 new cancer episodes were associated with obvious clinical signs ($p<0.05$). The proposed transfer of follow-up for patients to general practice by the national cancer control programme is appropriate.

Introduction

The national cancer control programme (NCCP) centralised the diagnosis and treatment of breast cancer in Ireland in 2008. The National Cancer Registry Ireland predicts a 53% increase in breast cancer incidence by 2030 which will place an increased demand on already stretched hospital resources[1]. Due to increasing referrals to symptomatic breast units, it has been suggested that follow-up of low risk breast cancer survivors be transferred to general practitioners (GPs). According to the most recent American society of clinical oncology (ASCO) guidelines, breast cancer follow-up and management after primary treatment should comprise regular history, physical examination, and mammography[2]. Previous ASCO guidelines made reference to continuation of care by primary care physicians (PCPs) and state that there is no difference in outcomes when compared to follow-up by hospital specialists nor is there any difference in patient satisfaction between the two. It also recommended that patients with early stage breast cancer should have their follow-up care transferred solely to a PCP after 1 year if patients so wish.[3] The national institute of clinical excellence (NICE) guidelines state that recurrent breast cancer usually causes symptoms which are frequently identified by patients and present to GPs regardless of whether they are receiving hospital based follow-up or not.[4] The aims of this study were to examine the evidence base for hospital follow-up of breast cancer survivors and to identify patient preferences for hospital or community follow-up. We also sought to survey GP attitudes towards community follow-up and to quantify the incidence of new or recurrent cancers in previously treated patients to establish what proportion would have been identified in the community.

Methods

A prospective study was performed analyzing patient and GP attitudes regarding community based follow-up for breast cancer survivors. A 22 item questionnaire was distributed to 101 low risk breast cancer survivors randomly chosen from a cohort of 921 patients comprising a single surgeon practice between 2000 and 2012 (KB). All patient surveillance was performed in one of two sites, either Mayo General Hospital or Galway University Hospital. Patients underwent examination at 2 weeks post-operative intervention and 6 months post diagnosis for the first two years followed by yearly attendance at the breast clinic. Clinical examination was graded S1 to S5 depending on relevant findings. S1 was classified as benign breast tissue; S2 represented clinically benign nodularity, S3 was classified as a potential benign lump requiring core biopsy for histological conformation. An S4 lesion represented a probable breast cancer on examination and an S5 lesion was categorized as a definitive breast cancer. All patients were assessed with a surveillance mammogram at yearly intervals and further investigated with ultrasound, MRI breast and core biopsy when clinically indicated. All new diagnoses and recurrences were discussed at the weekly western multidisciplinary team conference. To assess GP attitudes to community follow-up, a 9 item questionnaire was distributed to 81 GPs in county Mayo. Responses were collated and examined. A prospectively updated database of breast cancer survivors undergoing surveillance was interrogated and a review of pathology, radiology and clinical records of a single surgeon within the cancer network during the surveillance period [Oct 1st 2007 – Sept 30th 2013] was performed.

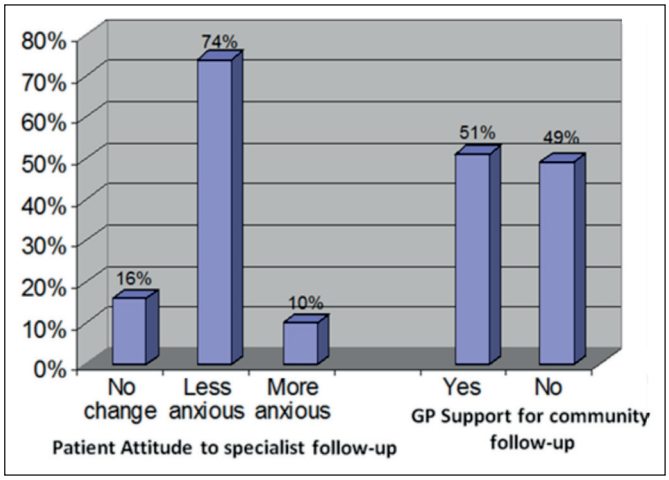

Figure 1 Patient attitude towards outpatient follow-up in specialist units for surveillance and GP support of follow-up care in the community.

Results

Patient and General practitioner attitude to community follow-up
A total response rate of 86% was achieved from breast cancer patient survivors and 66% from GPs surveyed. With regards to specialist unit outpatient follow-up, 10% of patients felt more anxious attending clinics, 74% of patients were less anxious and 16% reported no change in anxiety levels by attending the outpatients clinic for surveillance (Figure 1). GPs surveyed in the Mayo catchment area were equally divided in support for transfer of follow-up care to the community (51% v 49%, Figure 1). Patient attitude towards transfer of care to the community was strongly supported throughout. 78% of patients surveyed strongly agreed that GPs explained breast cancer issues clearly, while14% strongly disagreed ($p<0.05$, figure 2). 67% of patients surveyed felt confident in their GPs ability to carry out a thorough breast exam compared to 18% who strongly disagreed with this statement ($p<0.05$). From the patients surveyed 83% were confident that under the care of their GPs, they could be easily linked with specialist care if required whereas 10% of patients strongly disagreed with this comment. GP attitude towards the

CPD available online at www.imj.ie and questions on page 303.

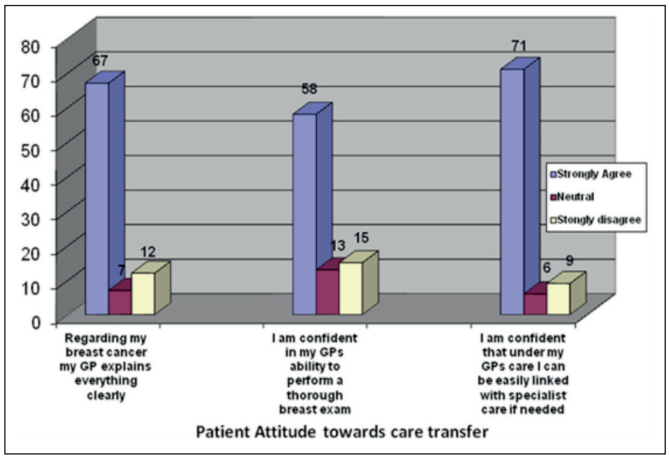

Figure 2 Patient attitude towards the transfer of their surveillance from specialist units to general practice.

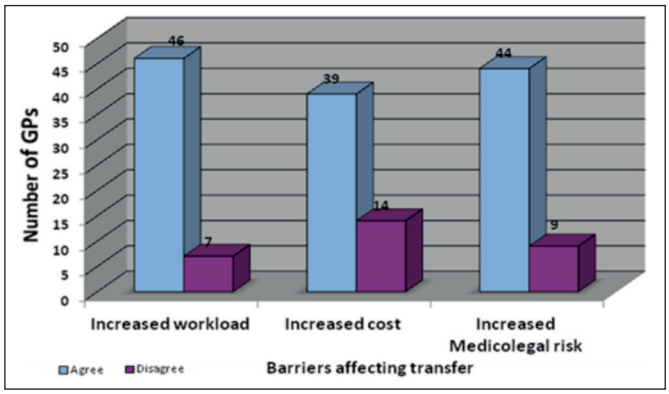

Figure 3 Barriers affecting the transfer of follow-up from specialist to community care.

barriers affecting the transfer of patient surveillance to the community was analysed. 87% of GPs surveyed felt it would increase their workload (figure 3). 74% of GPs surveyed reported that it would increase cost and 83% stated it would be associated with increased medicolegal risk.

Incidence of new primary breast cancers during surveillance period of Oct 2007 – Sept 2013

A total of 14 women (1.5%) were diagnosed with new primary breast cancers during the surveillance period of October 2007 – September 2013 (Table 1). Average length to new breast primary was 86.3 months. A significant proportion of patients presented with overt clinical signs, S4/5 at presentation ($p<0.05$). Invasive ductal carcinoma was the predominant histological type. 4 patients within the cohort were assigned an S1 score but subsequently were diagnosed with a new breast primary on mammogram. Two of these patients had DCIS and the remaining two patients had small stage 1 tumours (average size 15mm).

Table 1 Patients under surveillance with new primary breast cancers diagnosed between October 2007–September 2013

Patient	Interval time between cancer episodes (months)	S Grade (Examination Score) 1 = Normal 5 = Tumour	Histology
1	118	S1	IDC Grade 2 12mm
2	26	S5	IDC Grade 3 30mm
3	15	S5	IDC Grade 3 20mm
4	96	S5	IDC Grade 2 41mm
5	17	S5	IDC Grade 3 65mm
6	108	S5	IDC Grade 3 16mm
7	120	S1	IDC Grade 3 18mm
8	144	S1	DCIS
9	84	S1	DCIS
10	120	S5	IDC Grade 3 40mm
11	36	S5	IDC Grade 2 22mm
12	156	S4	IDC Grade 3 44mm
13	108	S5	IDC Grade 2 32mm
14	60	S5	High Grade DCIS

Discussion

Within our cohort of breast cancer survivors, 67% (58/86) of patients surveyed strongly agreed that they have confidence in their GPs to carry out a thorough breast exam. Furthermore 78% (67/86) of patients surveyed reported that the GPs explained details surrounding diagnosis and treatment plans to them clearly. More importantly 83% (71/86) of patients surveyed documented that they were confident under the care of a GP that they could be easily linked to specialist care if required. A survey of oncologists and PCPs in the US showed that only 10% of PCPs were in favor of a primary care led follow-up service, while the majority of oncologists (57%) in the study supported an oncologist led service.[5] A shared care model was favored by 38% of PCPs and 16% of oncologists. A similar study examined Dutch GPs acceptance in taking over breast cancer follow-up services.[6] Currently in the Netherlands, women aged over 60 years have their care transferred to general practice after 5 years of specialist follow-up. 80% of GPs felt that this arrangement was "Just right" while 32% believed that 'they should be involved at an earlier stage in breast cancer follow-up' .In the survey, 40% of GPs were willing to accept exclusive responsibility for follow-up earlier than 5 years after completion of active treatment. In addition, 19% of GPs were willing to take over follow-up immediately or 1–2 years after completion of active treatment. Within our study, GP respondents practicing in the Mayo area were equally divided in accepting the transfer of patients to primary care (51% v 49%).

A Canadian study indicated that 77% of GPs surveyed believed it appropriate to assume responsibility for follow-up care in all or most cases.[7] Throughout the literature three main barriers perceived by GPs in preventing take over of patient surveillance at an earlier stage were: patient preference for specialist follow-up (65%), personal oncology knowledge and skills (52%) and workload pressure (36%)[6]. In our study the three most common perceived barriers affecting transfer of care to GPs were increased workload (87%), increased cost (74%) and increased medico-legal risk (83%). 13% of GPs surveyed felt that transfer of care would not lead to increased workload. From our figures, the transfer of 921 treated patients to primary care follow-up by 81 GPs would equate to 1 annual patient follow-up visit per month per GP. A Canadian study compared the costs of general practice follow-up with specialist follow-up. During the 18 months of the study, general practice patients were seen significantly more frequently (mean of 3.4 v 2.8 follow-up visits).[8] Each follow-up visit was longer in the general practice group (mean 10.5 min) than in the hospital group (mean 7.4 min). The mean total cost and cost per visit was significantly less per patient in the general practice group than in the specialist group.

A systematic review examining primary and secondary care for breast cancer follow-up found that long-term support, surveillance mammography and fast access to medical treatment at point of need may be better than hospital based surveillance limited to five years.[9] Surveillance mammography and transfer to management in general practice or a nurse led service are acceptable to patients but adequate data on survival is lacking. A survey carried out in the UK analyzing specialists attitudes to breast cancer follow-up in primary care were asked to comment on their perception of the benefits of discharge to primary care.[10] The overwhelming response (70%) indicated that there would be 'reduced clinic workload'. The main disadvantages preventing early discharge to community care were 'lack of GP experience or training in oncology' and 'loss of patient outcome data'. Analysis of 296 patients receiving either follow up by GPs or hospital specialists found that women monitored by GPs were not noted to have an increased time to diagnosis of recurrent or contralateral breast cancer, increased anxiety or decreased quality of life when compared to women undergoing specialist follow-up.[11] It also highlighted that most recurrences are detected by patients in

between follow-up visits and present initially to GPs even if they are having follow-up conducted in a specialist unit. A similar study conducted in Canada comprising 968 patients compared recurrence rates and quality of life in those surveyed by GPs with those who had follow-up by specialists.[12] In the GP group, there were 54 (11.2%) recurrences or new contralateral breast cancers and 29 (6%) deaths. In the specialist group, there were 64 recurrences (13.2%) or new contralateral breast cancers and 30 deaths (6.2%) The total rate of serious clinical events (SCE) was low (35 for 3,240 patient-years of follow-up) and within the GP group accounted for 17 patients (3.5%) compared to 18 patients (3.7%) in the specialist group.

In the current study, 14 patients (1.5%) had a diagnosis of a new primary breast cancer. There were no local breast cancer recurrences identified. Of the 14 new primary cancers, 10 patients (72%) were S4/5 at presentation thus displaying obvious overt clinical signs of breast cancer prior to confirmation of diagnosis. The remaining four patients were classified as S1 and their diagnoses were solely based on mammographic findings. Two of these four patients were diagnosed with DCIS and two were diagnosed with small stage 1 invasive breast cancers. This study is in keeping with international literature and confirms that patients can be offered follow-up by GPs without concern that important recurrence-related SCEs will occur more frequently or that quality of life will be negatively affected[13]. Currently there is no evidence base to support hospital follow-up after primary treatments are completed. The combined results of our study suggest that the proposed transfer of follow-up arrangements for breast cancer patients to general practice by the National Cancer Control Programme is appropriate. However further targeted resources may be required to aid such transfer, including additional administrative tools, financial support for the resulting additional workload and prompt access to hospital clinics and diagnostic facilities.

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An Analysis of the Recording of Tobacco Use Among Inpatients in Irish Hospitals

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Abstract
Smoking is the largest avoidable cause of premature mortality in the world. Hospital admission is an opportunity to identify and help smokers quit. This study aimed to determine the level of recording of tobacco use (current and past) in Irish hospitals. Information on inpatient discharges with a tobacco use diagnosis was extracted from HIPE. In 2011, a quarter (n=84,679) of discharges had a recording of tobacco use, which were more common among males (29% (n=50,161) male v. 20% (n=30,162) female), among medical patients (29% (n=54,375) medical v. 20% (n=30,162) other) and was highest among those aged 55-59 years (30.6%; n=7,885). SLÁN 2007 reported that 48% of adults had smoked at some point in their lives. This study would suggest an under-reporting of tobacco use among hospital inpatients. Efforts should be made to record smoking status at hospital admission, and to improve the quality of the HIPE coding of tobacco use.

Introduction

Smoking is currently the largest avoidable cause of premature mortality and disability in the world, and helping smokers to quit smoking is the most cost-effective intervention available[1]. In Ireland, it is estimated that 36,000 hospital discharges per year are attributable to smoking[2]. Hospital admission is an opportunity to identify smokers and offer help to stop smoking. Clinical guidelines recommend the ascertainment of smoking status and

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the delivery of smoking cessation interventions in all health consultations[3]. SLÁN 2007 reported that almost half (48%) of adults were current or former smokers[4]. Recent figures from the National Tobacco Control Office report that the prevalence of cigarette smoking in Ireland is currently at 21.7%[5].

International literature on the prevalence of current smoking among hospital patients varies widely: UK studies report that 13% of hospital patients were current smokers;[6] studies from the United States and Brazil report that between 15% and 25% of hospital inpatients are current smokers[7-10]; however, additional studies from Australia, Italy and San Francisco in the United States estimate that as many as 40% of hospital patients may be active smokers[11-15]. In Ireland, St Vincent's University Hospital in Dublin, has published widely on smoking prevalence in their hospital population[16,17]. In 2010, they reported that 18% of inpatients were current smokers, down from a rate of 22.7% in 2006[17]. In 2012, a study in Beaumont Hospital reported that 21% of a sample of their inpatients was current smokers, with 61% of them reporting that they had been asked by a healthcare professional about smoking in the previous twelve months[18]. In 2007, a Health Service Executive (HSE) commissioned National Consumer Satisfaction Study reported that 29% of respondents were current smokers, and that 49% of them had received information about stopping smoking, mostly leaflets[19]. The aim of this study was to determine the proportion of inpatient hospital discharges from acute hospitals in Ireland, who had tobacco use recorded as a diagnosis on their medical record, as reported on the Hospital In-Patient Enquiry (HIPE) System.

Methods

Data for this study were extracted from the Hospital In-Patient Enquiry (HIPE) system via Health Atlas Ireland (HAI). HAI is an open source application which enables web-based mapping of health-related data on a national basis. All inpatient discharges (excluding maternity, HIPE code admission type 6) from acute hospitals in the Republic of Ireland, aged 18 years and over, with any diagnosis of tobacco use were extracted for the years 2005-2011. Tobacco use was defined as per Table 1. Results are presented by year of hospital discharge, age and gender and consultant specialty. Using HAI, additional analysis was carried out on those discharges aged 35 years and older, who had a principal diagnosis of a smoking-related condition as defined by Callum & White from the London Health Observatory[21] to determine the level of recording of tobacco use among these groups.

Table 1 Tobacco use-related diagnosis codes, ICD-10-AM classification[20]

ICD-10-AM diagnosis code and description
F17.1 Harmful use of tobacco.
• Where the clinician has clearly documented a relationship between a particular condition(s) and smoking (even if the patient has ceased smoking).
F17.2 Tobacco dependence.
• Where there is appropriate documentation to indicate that the patient is diagnosed as having 'tobacco dependence syndrome'.
F17.3 Withdrawal state.
Z72.0 Tobacco use, current. Use within last month (any amount).
• Excludes F17.1 (harmful use of tobacco) and F17.2 (tobacco dependence).
• Should only be used when sufficient info is not available to assign F17.1 or F17.2
Z86.43 Personal past history of tobacco use disorder.
• Patient has smoked tobacco (any amount) in the past, but excluding the last month.
• Excludes F17.1 (harmful use of tobacco) and F17.2 (tobacco dependence)

Results

The Recording of Tobacco Use on HIPE, 2005-2011

In 2011, 24.6% (n=84,679) of inpatient discharges had a recording of tobacco use (current or past) on their HIPE record. This compares to 19.7% (n=66,409) in 2005. Looking at the individual codes as detailed in Table 2, the most commonly recorded diagnosis codes were Z72.0 current tobacco use and Z86.43 past history of tobacco use disorder. Few recorded the F17.1, F17.2 or F17.3 diagnosis codes. In 2011, 13.4% of inpatients had a diagnosis of Z72.0 current tobacco use and 11.1% had a diagnosis of Z86.43 past history of tobacco use. This compares to 12.0% (current) and 7.7% (ex-smokers) in 2005.

Table 2 Proportion of discharges with any diagnosis of tobacco use (total and individual codes) as recorded on HIPE, 2005-2011

	Year of Hospital Discharge						
	2005	2006	2007	2008	2009	2010	2011
HIPE records with any recording of Tobacco Use	66,409	79,459	83,895	82,304	84,058	83,148	84,679
% of all hospital inpatient discharges	19.7%	22.7%	23.3%	23.2%	23.9%	23.9%	24.6%
ICD-10-AM Tobacco Use Diagnosis Codes	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
F17.1 Harmful use	37 (<1.0)	20 (<1.0)	23 (<1.0)	16 (<1.0)	31 (<1.0)	26 (<1.0)	17 (<1.0)
F17.2 Tobacco dependence	2 (<1.0)	3 (<1.0)	1 (<1.0)	3 (<1.0)	2 (<1.0)	6 (<1.0)	4 (<1.0)
F17.3 Withdrawal state	2 (<1.0)	2 (<1.0)	0 (0.0)	0 (<1.0)	1 (<1.0)	4 (<1.0)	2 (<1.0)
Z72.0 Tobacco use, current	40,374 (12.0)	47,530 (13.6)	49,877 (13.9)	47,988 (13.6)	48,765 (13.9)	46,741 (13.4)	46,289 (13.4)
Z86.43 Past history of tobacco use disorder	25,995 (7.7)	31,907 (9.1)	33,995 (9.4)	34,297 (9.7)	35,262 (10.0)	36,383 (10.4)	38,374 (11.1)

Profile of the Discharges with a Recording of Tobacco Use as Reported on HIPE, 2011

Figure 1 details the proportion of hospital discharges recorded as being current smokers (Z72.0) or ex-smokers (Z86.43), by age-group in 2011. The highest level of recording of any tobacco use was among those aged 55-59 years (30.6%), with the lowest level among those aged 18-19 years (12.6%). Looking at current smokers, the highest proportion were among discharges aged 45-49 years (20.2%), after which the levels decreased with increasing age. The proportion of ex-smokers increased with increasing age, with the highest proportion of ex-smokers among those aged 70-74 years (17.3%). The majority (73%) of ex-smokers were aged 60+ years.

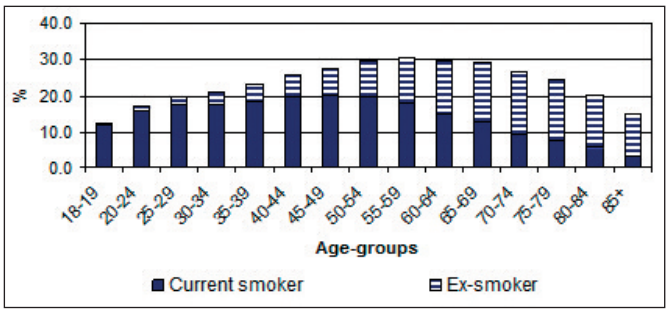

Figure 1 Proportions of hospital discharges recorded as current smokers or ex-smokers, by age-group, 2011

Almost 30% (28.6%) of male discharges had a recording of tobacco use compared to 20% of females. In 2011, similar proportions of male and female discharges were recorded as being current smokers (male:14.7%, female:12.2%); however, almost twice as many male discharges were ex-smokers (13.9%) compared to females (8.3%). By consultant specialty, almost 30% (28.5%) of medical discharges had a recording of tobacco use compared to 19.7% of other discharges. In 2011, 14.7% of medical discharges were recorded as being current smokers and 13.8% were ex-smokers, compared to 11.8% (current) and 7.9% (ex) of other discharges.

Discharges aged 35+ Years with smoking-related diseases/conditions

Figure 2 details the level of recording of tobacco use among discharges aged 35 years and over, with a principal diagnosis of a smoking-related condition as defined by Callum & White 21 for 2011. The highest level of recording of tobacco use was among those with a principal diagnosis of cancer of the larynx (58.6%), followed by chronic airway obstruction (55.4%) and cancer of the trachea, lung and bronchus (55.3%). The lowest rate was among those with cataracts (3.8%).

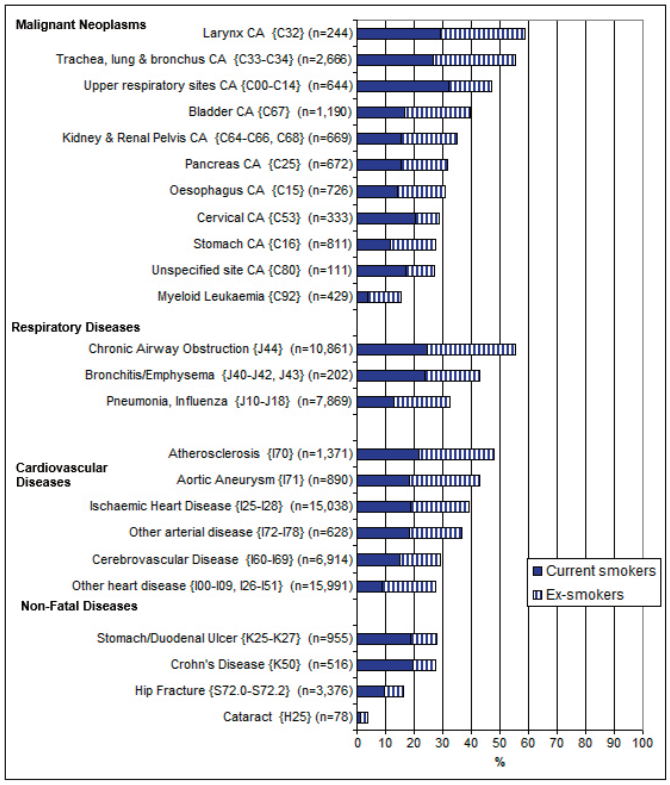

Figure 2 Proportions of hospital discharges aged 35+ years, with a principal diagnosis of a smoking-related disease, recorded as being current smokers or ex-smokers, 2011

Patients with a principal diagnosis of cancer of the upper respiratory sites (32.1%), cancer of the larynx (29.1%) and cancer of the trachea, lung and bronchus (26.6%) were most likely to be current smokers, while, those with a principal diagnosis of chronic airway obstruction (30.6%), cancer of the larynx (29.5%) and cancer of the trachea, lung and bronchus (28.7%) were most likely to be ex-smokers.

Discussion

Hospital admissions are an opportunity to identify smokers and to offer help to enable them to quit. Clinical guidelines recommend the ascertainment of smoking status and the delivery of smoking cessation interventions in all health consultations[3]. The aim of this study was to determine the proportion of inpatients with a recording of tobacco use on their medical record, as reported on HIPE. This study reports that a quarter (24.6%) of inpatients had any recording of tobacco use on their medical record. SLÁN 2007 reported that 48% of adults have smoked at some stage in their lives[4]. Looking at type, 13.4% of inpatients were current smokers, defined as having smoked in the last month, while 11.1% were past smokers, defined as having smoked in the past, but excluding the last month. The National Tobacco Control Office reports that 21.7% of the Irish population are current smokers, defined as smoking at least one cigarette per week[5]. This data would suggest that there is an under-reporting of tobacco use (current and past) among these hospital inpatients.

HIPE is the only data source for this report, and is the only source of morbidity data available nationally for acute hospital services in Ireland. It has high quality controls and is managed by the Healthcare Pricing Office. There are limitations to this study. The data source itself (HIPE) records episodes of care and does not allow for the tracking or linking of individual patients through the hospital system. Due to the lack of unique identifiers, patients may be admitted to hospital more than once in any given period with the same or different diagnoses, or admitted to different hospitals and therefore given a different medical record number. However, we feel that these limitations will not impact greatly on our study, as the overall aim was to report on the level of recording of patients' history of tobacco use on medical records during their hospital admission. Most of this report considered the diagnostic codes Z72.0 and Z86.43 as 99.9% of the data concerned these two codes, with less than 1% relating to the F17.1, F17.2 and F17.3 codes (see Table 1). A review of these codes' definitions would indicate that in most cases, the F17.1 and F17.2 diagnoses codes are the more appropriate codes. However, they can only be used when a relationship between the condition and smoking is documented; as a result, the codes Z72.0 and Z86.43 are only to be used where insufficient information is available. However, as our analyses displays, Z72.0 and Z86.43 are the 'default' codes used in most cases. This may indicate a lack of information by medical personnel in the medical record, thus preventing the coder from using the most appropriate code as per coding guidelines. Either way, there should be an emphasis placed on using the most appropriate codes for the purposes of quality improvement. The level of under-reporting of tobacco use among patients in Irish hospitals is difficult to determine due to the fact that we cannot quantify the numbers who 'never-smoked'; there are no codes in the WHO ICD classification for 'never smoked'. Therefore, we cannot distinguish between the proportions of those who never smoked, and an under-reporting of tobacco use on HIPE.

The report 'Tobacco in London: The Preventable Burden' produced by the London Health Observatory[21] details a methodology which allows for the estimation of the smoking-attributable proportion of hospital admissions for a number of smoking-related conditions, as listed in Figure 2. In our analysis, in particular, many cancers and diseases of the respiratory system had low proportions of inpatients with a recording of tobacco use, where a high proportion of these conditions are estimated to be smoking-related. For example, it is estimated that 84% of cancers of the trachea, lung and bronchus are smoking-related, yet just 55% of inpatients with a diagnosis of cancer of the trachea, lung and bronchus in this study had a recording of any tobacco use on their medical record. Similarly, just 43% of those with a diagnosis of bronchitis/emphysema had a recording of any tobacco use, where it is estimated that 86% of cases of bronchitis/emphysema are smoking-related. And, while hospitals should ascertain the smoking status of all inpatients on hospital admission, those with smoking-related conditions should be a particular focus.

Continued efforts should be made to improve the quality of the coding of tobacco use on HIPE, by the medical personnel in documenting a relationship between the patients' condition and smoking, thus enabling the coders to use the most appropriate codes as per coding guidelines. Smoking is currently the largest avoidable cause of premature mortality and disability in the world, and helping smokers to quit is the most cost-effective intervention. However, unless these patients are identified on occasions such as a hospital admission, they may not receive the necessary treatment and support to help them stop smoking. Efforts should be made to ensure that smoking status of all patients is ascertained at all health encounters as recommended by international clinical guidelines, and in particular patients with a smoking-related condition.

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The Incidence of Childhood Type 1 Diabetes in Ireland and the National Childhood Diabetes Register

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Abstract
The incidence of Type 1 diabetes (T1D) in childhood and adolescence is increasing globally with few exceptions. To date limited conflicting data has been available regarding diabetes epidemiology in Ireland. We sought to determine the incidence of T1D in those aged under 15 years in the ROI by establishing a prospective national register of incident cases (Irish Childhood Diabetes National Registry (ICDNR)) using a standardised protocol which includes a measure of case ascertainment using capture-recapture methodology. In the period, 489 new cases were identified. All paediatric centres nationally participated. The directly standardised incidence rate was 27.5 per 100,000 per year (95%CIs: 24.0, 30.9) and 26.0 (95%CIs: 22.7, 29.3) in 2008 and 2009 respectively. The ICDNR is widely acceptable, it has confirmed a high incidence of T1D and is vital to monitor changes in disease incidence, optimise resource utilisation and diabetes management in the Irish population.

Introduction
The aims of this study were to: explore the epidemiology of T1D in the Irish population aged under 15 years; determine if the ROI is an area of high disease incidence by establishing an Irish Childhood Diabetes National Register (ICDNR).

Methods
All 20 centres (1 private facility) nationally caring for children with T1D were identified and invited to participate in the study. Prospective notification of incident cases were made by Paediatricians and Diabetes Nurse Specialists nationally from Jan 1st 2008. The case definition employed was similar to the Diabetes Mondiale- Diamond Study (1991)[7] and national 1997 study[4], requiring that cases: were diagnosed by a physician with T1D before their fifteenth birthday; required daily insulin injections; and were resident in the ROI at diagnosis. Exclusion criteria were: age over 15 years and secondary or non-Type 1 diabetes. On notification of an index case, clinical and demographic data were obtained from the reporting centre for case verification, to exclude multiple reports and facilitate secondary ascertainment. Regular contact was maintained with reporting centres to ensure optimal reporting with a minimum of quarterly contacts with all centres. As some cases over the age of 14 years may present to adult services, adult Endocrinologists nationally were surveyed also. Ethical permission was obtained from the Joint Ethics Committee of the Federated Dublin

Voluntary Hospitals. A secondary source of case identification was employed to enable estimation of completeness of ascertainment using capture-recapture methodology[8]. In the ROI, the State provides insulin therapy free to all who require it, independent of means, through a number of support schemes administered by the Primary Care Reimbursement Services (PCRS). Of these the Long-term Illness State-held computerised support scheme for those with diabetes was employed as the secondary source of case identification.

Information regarding new insulin prescriptions for the target group in the time period was requested but declined. Participants were enrolled in the National Register following signed informed consent. A Steering Group was established to oversee the Register. Data collection and management was conducted in line with the National Data Protection Legislation[9]. Crude and category specific incidence rates were calculated for age- and sex- category using revised intercensal estimates of population for 2008 and 2009, provided by the Central Statistics Office (CSO)[10]. The direct method of standardisation, using the common standard population, which assumes equal numbers in each age- and sex- category was employed to permit comparison of incidence rates internationally and across time[11].

Data was analysed using SPSS 16. Confidence intervals (CI's) for Crude and category-specific rates were derived from confidence intervals for Poisson counts using STATA Release 9 and for directly standardised rates were calculated using the normal approximation to the binomial using Microsoft Excel. Capture-recapture methodology was used to estimate the degree of completeness of ascertainment[7,8]. The Student's t-test and Chi squared test were used where appropriate to compare groups.

Table 1 Age- and Sex- Category of Incident Cases and population data in 2008 and 2009

		2008		2009	
Sex	Age (years)	Incident Cases	Population (persons)	Incident Cases	Population (persons)
Males	0-4.99	34	165,907	33	171,440
	5-9.99	45	156,282	50	158,514
	10-14.99	56	145,294	40	149,240
	0-14.99	135	467,483	123	479,194
Females	0-4.99	27	158,100	32	163,787
	5-9.99	42	149,956	41	152,167
	10-14.99	44	137,852	45	141,233
	0-14.99	113	445,908	118	457,187
Total	0-14.99	248	913,391	241	936,381

Table 2 Overall Crude Incidence Rates and Age- and Sex- specific Incidence Rates of Type 1 diabetes in children under the age of 15 years in the Republic of Ireland (ROI) in 2008 and 2009

Age Category (years)	Year	Incidence Rate Male (95% CI)	Incidence Rate Female (95% CI)	Incidence Rate Male and Female (95% CI)
0 – 4.99	2008	20.5 (14.2, 28.6)	17.1 (11.3, 24.8)	18.8 (14.4, 24.2)
	2009	19.3 (13.2, 27.0)	19.5 (13.4, 27.6)	19.4 (15.0, 24.7)
5 – 9.99	2008	28.8 (21.0, 38.5)	28.0 (20.2, 37.9)	28.4 (22.8, 35.0)
	2009	31.5 (23.4, 41.6)	26.9 (19.3, 36.6)	29.3 (23.6, 36.0)
10 – 14.99	2008	38.5 (29.1, 50.0)	31.9 (23.2, 42.8)	35.3 (28.7, 43.0)
	2009	26.8 (19.2, 36.5)	31.9 (23.2, 42.6)	29.3 (23.4, 36.2)
0 – 14.99	2008	28.9 (24.2, 34.2)	25.3 (20.9, 30.5)	27.2 (23.9, 30.7)
	2009	25.7 (21.3, 30.6)	25.8 (21.4, 30.9)	25.7 (22.6, 29.2)

Results

All 20 centres caring for children with diabetes participated and submitted data. The number of new patients identified nationally meeting the diagnostic criteria, were: 248 and 241 in 2008 and 2009 respectively (Table 1). Of these 241 (97.2%) consented to join the National register in 2008, as five migrated and two refused and 236 (97.9%) in 2009 where five patients declined. Minimal anonymous baseline data is available on all notified patients for calculation of incidence rates. Two additional cases, both 14 years old, were identified from Adult services in 2009, and none in 2008. The secondary source of case identification (Long-Term Illness notifications) identified 279 potential cases for 2008 and 226 for 2009 respectively, with 185 common to both sources in 2008 and 165 in 2009. Using capture-recapture methodology the estimated overall case ascertainment was 91.5% (95% CI 87.8-95.5%) for 2008 and 91.5% (95% CI 87.7-95.8%) for 2009, for both sources combined. The completeness of ascertainment of the ICDNR was estimated at 66.3% (95% CI 63.7-69.2%) in 2008 and 73.1% (95% CI 70.0 – 76.4%) in 2009.

Data is not available for ascertainment purposes for those who did not consent to join the ICDNR (n=12). National Incidence rates were calculated for the population. Crude and category specific incidence rates are shown in Table 2. The directly standardised incidence rates of T1D was 27.5 per 100,000 per year (95%CIs: 24.0, 30.9) in 2008 and 26.0 per 100,000 per year (95%CIs: 22.7, 29.3) in 2009 (Table 3). Poisson regression analysis was performed to investigate the effects of age, gender and year on the rate of diabetes. There was no evidence that the overall rate (controlling for age and gender) changed between 2008 and 2009. There was a significant relationship between age and incidence of diabetes ($p<0.001$) with the 5-9.99 year age group having an incident rate 1.55 (1.2, 1.9) times the 0-4.99 age group and the 10- 14.99 year age group having an incident rate 1.73 (1.4, 2.2) times the 0-4.99 age group. The mean age at diagnosis was 8.5 years (range 0.60 – 14.79) in 2008 and 7.91 years (range 0.88 – 14.81) in 2009 (Table 4). There was no significant difference in the average age at presentation in the two years (t=1.69,df=487,p=.09).

The male to female ratio of cases at 1.19:1 in 2008 showed a slight but not significant excess of males compared to the general population (1.05:1) (X2=1.03, df=1, p=0.32) and at (1.04:1) in 2009 is similar to that of the general population in 2009 (1.05:1). There were no significant differences between the proportions of males and females in the two years (X2=0.71, df=1, p-0.4).

Table 3 Comparison of Standardised incidence rates of Type 1 diabetes in the Republic of Ireland aged under 15 years (1997*,2008, 2009)

	Standardised Incidence rate per 100,000 per year (95% CI)		
Sex	1997*	2008	2009
Males†	16.4 (13.2, 21.1)	29.3 (24.3, 34.2)	25.9 (19.3, 32.4)
Females†	16.2 (12.6, 20.7)	25.7 (20.9, 30.4)	26.1 (21.4, 30.8)
Total §	16.3 (14.2, 18.5)	27.5 (24.0, 30.9)	26.0 (22.7, 29.3)

*1997 data from Roche et al, Journal of Paediatric Endocrinology and Metabolism 2002; 15(8):1191-4
† Age standardised incidence rates (95% CIs) using the direct method of standardisation
§ Age- and sex- standardised incidence rates (95% CIs) using the direct method of standardisation based on a standard population with equal numbers of children in each of the age and sex subgroups

Table 4 Mean Age at Diagnosis of Type 1 Diabetes in children under the age of 15 years in the Republic of Ireland (ROI) in 2008 and 2009. (t=1.69, df=487,p=.09).

Year	Number	Age at Diagnosis Mean Age in years	SD
2008	248	8.50	3.94
2009	241	7.91	3.73

Discussion

Establishing a national childhood diabetes register is complex and time consuming. The ICDNR is valued by patients, families, nurse specialists and doctors caring for children with T1D. 100% of centres participate and consistently return data. There is a high participation rate among parents and young children at over 97%. The main reason for non-participation was migration. This study utilised a comprehensive methodology and would be expected to capture the majority of new cases. In Ireland, children are admitted at diagnosis and cared for by a limited number of paediatricians. The ICDNR maintained regular contact with these centres, undertook multiple crosschecks of data returns and systematically contacted each centre a minimum of 4 times per year to optimise and verify case reporting. Adult centres were surveyed also. The ascertainment levels at 66.3% and 73.1% for the ICDNR appear under-estimated given the comprehensive methodology employed.

A number of limitations and misclassifications were identified in the secondary ascertainment source which would result in an under-estimated ascertainment level for the ICDNR. Non-participants (n=12) in the ICDNR would appear in the PCRS dataset and cases who were registered late with the PCRS would not appear in the incident year resulting in a falsely low ascertainment rate. A number of misclassifications were identified but the researchers were not permitted to validate these cases identified by the secondary source alone to protect patient confidentiality and so ascertainment rates could not be further refined. Had information regarding new insulin prescriptions been made available this would have improved the accuracy of the secondary or re-capture source. In an effort to improve the accuracy of the LTI data provided from the PCRS information was sought from the Local Health Offices, who receive the initial signed notification from clinicians and provide the information to the PCRS. The majority of the Local Health Offices declined to provide data but 4 Local Health Offices covering different geographical regions did participate, acting as a secondary source of case identification at a more local level.

These 4 regions reported fewer incident cases (n = 77) than were identified by the ICDNR (n=80), yielding an ascertainment level of 92.2% for the ICDNR and 99.1% overall for both sources combined. This confirms the authors' suspicion that the level of ascertainment by the ICDNR was higher than it would appear from the PCRS data. However, the PCRS data is becoming more reliable and refined through our collaboration. Secondary case ascertainment for those with T1D in Ireland is challenging. A number of potential secondary sources were evaluated. The PCRS data set provides national coverage, is the only computerised system and despite its limitations remains the best source of secondary ascertainment currently available and the most amenable for the application of capture-recapture methodology. The authors are grateful to the PCRS who are collaborating closely to further refine the accuracy of the secondary capture data which is improving with time, increasing from 66.3% in 2008 to 73.1% in 2009.

This study confirms Ireland has a high incidence of T1D in those under 15 years as reported in the 1997 national study[4] Comparing the Irish 2008 directly standardised incidence rate of T1D with European data from 16 Eurodiab centres from 14 countries, who provide complete data for both time periods 1994-8 and 2004-2008, confirms that the IR of ROI remains in the top quartile for Europe[5,6]. The incidence of T1D in the Irish population has increased substantially between 1997 and 2008. from 16.3 to 27.5/100,000/year, Most other areas of Europe have also reported increased incidence in T1D in the time period[5,6]. A number of studies have described the greatest increase in diabetes in children under five[15,14]. We found no evidence that the growth rate was different for each of the genders or age groups. We found the increased incidence of diabetes in all age groups and gender with a significant relationship between age and incidence of diabetes. The Australian National Register also found the mean incidence increased with age, although they reported significantly higher incidence in boys aged 0-4 and 10-14 years[15]. North West Saudi Arabia also reported an increased incidence in the older age groups[16]. In the Irish population there is no statistical evidence to suggest that the average age at diagnosis is decreasing. In the ROI the increased IR is noted with increasing age category, being highest in the 10-14.99 age category, this could possibly reflect an environmental effect 5-10 years previously affecting the older age groups more.

Perhaps, the slight though not significant reduction in IR in 2009 may reflect a stabilisation in the Irish population. It may be that the Irish childhood population has experienced increased environmental pressure on those predisposed to the development of Type 1 diabetes in the recent past and are now approaching incidence rates of our European neighbours. Thus, the Republic of Ireland is confirmed as a high incidence area of Type 1 diabetes. The incidence has risen substantially since 1997 and further monitoring is required to determine if the rate of increase in T1D is stabilising in this population. The ICDNR is acceptable with a high participation rate and provides an important mechanism to monitor future trends in diabetes epidemiology in the Irish population. The ICDNR provides for the first time robust data for health planning and audit purposes. Understanding the cause of Type 1 diabetes and the "environmental agent (s)" that is causing this disease to occur more frequently and at an earlier age in some populations is crucial to ultimately prevent this disease. National disease registries are essential for the provision of reliable information to enable better understanding of this process and the allocation of appropriate resources to manage this important disease.

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Thromboprophylaxis in Myeloma: What is Happening Outside of Clinical Trials?

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Abstract
Patients with myeloma are at high risk of venous thromboembolism (VTE). There is no consensus about what agent to use or what haematologists are doing in clinical practice. A survey was sent to haematologists treating patients with myeloma in Ireland. 32/45 (71%) responded. 13/28 (46%) felt that VTE affected <5% of patients. However, 8/28 (29%) felt it affected 10-19%. Thromboprophylaxis was most commonly used in patients on lenalidomide; 25/28(89%) and thalidomide; 23/28(82%). 23/28(82%) used LMWH and 20/28 (71%) used aspirin either very frequently or frequently. 3/28 (11%) had used dabigatran/rivaroxaban despite there being little evidence to support their use. Efficacy was the most important factor in choosing an agent for 25/28(89%). Bleeding was not felt to be an issue. 15/29 (52%) were not using thromboprophylaxis guidelines. This survey demonstrated wide variation in the beliefs and practices regarding the burden of VTE in patients with myeloma and the need for thromboprophylaxis.

Introduction

Venous thromboembolism (VTE), comprising deep vein thrombosis (DVT) and pulmonary embolus (PE) is a common cause of preventable morbidity and mortality. The risk is increased in patients with cancer and it is a leading cause of death, coming second only to cancer progression[1]. The risk is further increased by admission to hospital, surgery and administration of chemotherapy[2]. Thrombotic complications can delay or interfere with cancer therapy, prolong hospitalization and lead to increased use of resources[3]. Myeloma is a malignant disorder characterised by the clonal proliferation of plasma cells. Plasma cell disorders have long been linked to VTE[4]. It came to prominence with the advent of immunomodulatory agents such as thalidomide and lenalidomide, which dramatically improved the outcomes in these patients at the expense of complications such as VTE[5]. Despite widespread acknowledgement of the efficacy of thromboprophylactic strategies, they are under-prescribed[6-8]. Even if thromboprophylactic strategies are prescribed, there is a significant non-administration rate[9,10]. Patient refusal is the most commonly cited reason for non-administration. There is evidence of decreasing non-administration rates by providing education to patients but this was found to be at great cost and was likely unsustainable[11] and a targeted, more efficient system was thought to be indicated.

Most of the literature on implementation of VTE prophylactic strategies has focused on hospitalised patients following with the Agency for Healthcare Research and Quality and the Centres for Medicare and Medicaid Services in the US and The National Institute of Clinical Excellence in the UK have prioritised improvement in VTE prophylaxis practice[12,13]. A number of strategies have been employed to improve thromboprophylaxis practices[14,15] with a combination of education and clinical decision supports having been found to be the most successful. Prediction and prophylaxis of VTE in the cancer setting has come to the forefront of cancer care with both the American Society of Clinical Oncology[16] and the International Society of Thrombosis and Haemostasis[17] issuing guidelines in 2013. Myeloma specific guidelines are also available[18]. The aim of this study was to investigate haematologists' attitudes to VTE and thromboprophylaxis in patients with myeloma by means of a national survey.

Methods

As no validated tool was available to answer the research question, the survey was constructed by the investigators which included consultant haematologists with interests in myeloma and haemostasis-thrombosis and an epidemiologist. The survey was then piloted to assess reliability. Following feedback from this, adjustments were made which resulted in a nine question survey. The target audience was identified by obtaining a list of all haematologists working in the republic of Ireland from the Irish Haematology Society. Paediatric haematologists and haematologists working in blood transfusion service were excluded leaving forty-five consultants from fifteen hospitals. The survey was initially formatted as a self-administered online survey and a link was emailed to the target haematologists. Due to an initial poor response, the survey was sent out by post with a stamp addressed envelope. To maximise response rate and openness, the responses were anonymous. Responses were included in the analysis if at least ninety percent of the survey was completed (eight out of nine questions answered). The response rate was calculated by dividing the total number of responses (complete or incomplete) by the total number of surveys distributed. Analyses were performed using Predictive Analytical Software Statistics, Version 18.0 using a two-sided type 1 error rate of 0.05.

Table 1 Haematologists perception of the burden of VTE in patients with myeloma

Percentage of Patients with VTE	Number of Respondents	Percentage of Respondents
<5%	13	46.4%
5-9%	6	21.4%
10-19%	8	28.6%
20% and over	0	0%
No data	1	3.6%
Total	28	100%

Results

Six surveys were completed online and twenty-five were completed by post. This resulted in a response rate of 71.1% (32/45). Twenty-eight responses met the minimum requirement

for inclusion in analysis. The first question asked about the number of patients with myeloma that a haematologist currently looked after. The median (IQR) number of patients per respondent was 30 (11.3-47.5). The second question addressed physicians' use of prophylaxis in general. All respondents provided data. Seven (25%) always used some form of thromboprophylaxis in their patients with myeloma and twenty-one (75%) used it on occasion. The third question addressed physicians' beliefs about the burden of VTE in their patients with myeloma. Twenty-seven (96.4%) respondents provided information (Table 1). Almost half (46.4%) felt it was a problem in in less than 5% of patients. The fourth question addressed how physicians assess their patients with myeloma in terms of VTE risk. All respondents provided data (Table 2). The most common indications given for commencing thromboprophylaxis were when a patient was commenced on an immunomodulatory agent in combination with steroids or cytotoxic therapy or if a patient was high risk for VTE aside from the myeloma.

Table 2 Indications given for a patient with myeloma to be commenced on thromboprophylaxis

	Number of Respondents	Percentage of Respondents
All newly diagnosed patients	3	10.7%
All relapsed patients	1	3.6%
All Hospitalised patients	18	64.3%
Lenalidomide in combination with high dose steroids or cytotoxic therapy.	25	89.3%
Thalidomide in combination with high dose steroids or cytotoxic therapy	23	82.1%
Maintenance Lenalidomide	11	39.3%
Maintenance Thalidomide	10	35.7%
Erythropoietin Stimulating Agents	5	17.9%
General VTE Risk Assessment Tool	22	78.6%

The fifth question asked if a patient's disease burden had an effect on their VTE risk stratification of patients. All respondents provided data. Twenty-five (89.3%) respondents claimed that it did not affect their VTE risk stratification. Five respondents thought that a high paraprotein level made a patient high risk. Twenty-three (82.1%) respondents claimed that it did not affect their VTE risk stratification. Three respondents felt that a high International Staging System (ISS) made patients high risk. The sixth question asked about physicians' use of thromboprophylaxis guidelines. Twenty-nine (90.6%) respondents provided information. Fourteen (48.27%) used guidelines. Two used a local hospital guideline and the remainder used a mixture of published guidelines. The most commonly used were the Mayo Clinic guideline and the International Myeloma Working Group guideline. The seventh question looked at what agents physicians used for thromboprophylaxis. All respondents provided details. Aspirin 75mg and Tinzaparin 4500 units were the most commonly used agents (Figure 1). One respondent had used dabigatran 220mg

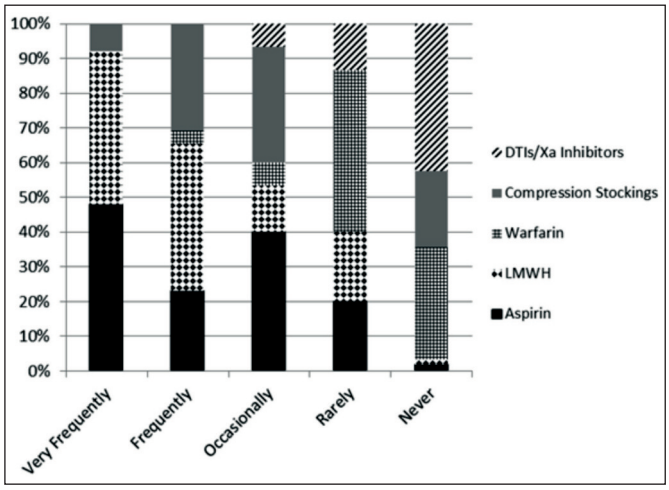

Figure 1 Frequency of use and type of thromboprophylactic agents in myeloma

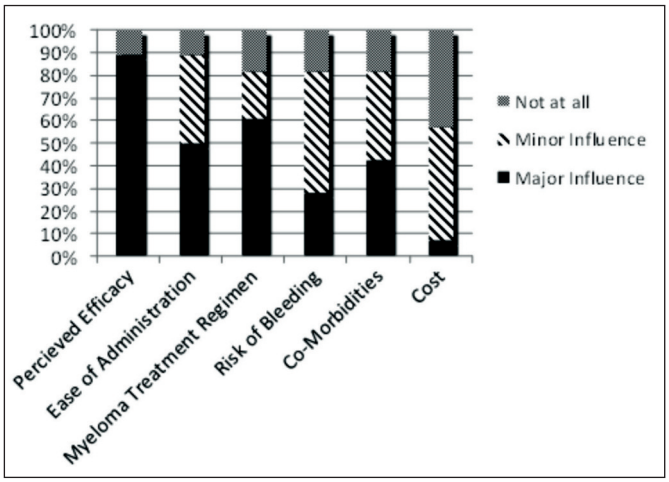

Figure 2 Factors that influence choice of thromboprophylactic agents

and two respondents had used rivaroxaban (unspecified dose) for thromboprophylaxis.

The eight question addressed factors that influenced the choice of prophylactic agent. All respondents provided details (Figure 2). Perceived efficacy of the agent had the greatest influence on agent selection with 89.3% (n=25) stating that it had a major influence on their choice. The bleeding risk had a major influence on the choice of agent for eight (28.6%), a minor influence on fifteen (53.6%) and no influence on five (17.9%). The treatment regimen had a major influence on choice of agent on seventeen (60.7%), a minor influence on six (21.4%) and no influence on five (17.9%). A patient's co-morbidities had a major influence on twelve (42.9%), a minor influence on eleven (39.3%) and no influence on five (17.9%). The ease of administration of the prophylactic agent had a major influence on fourteen (50%), a minor influence on eleven (39.3%) and no influence on three (10.7%). The cost of the agent has a major influence on two (7.14%), a minor influence on fourteen (50%) and no influence on twelve (42.9%). Others stated that they based their choice on local guidelines, patient choice, patient's renal function and medical and nursing staffs' familiarity with particular agents.

The final question addressed bleeding issues in patients with myeloma. Most respondents felt that it was not an issue. Nine (32.1%) respondents said that major bleeding was rarely a problem and nineteen (67.9%) said that it was never a problem. Only two (7.14%) respondents said that minor bleeding was frequently a problem.

Discussion

To our knowledge, this is the first national survey addressing the issue of thromboprophylaxis in patients with myeloma. It demonstrated wide variations in beliefs and practices amongst haematologists. VTE rates with single agent thalidomide and lenalidomide are <5%, but when combined with high dose dexamethasone, they range from 14% to 26% for thalidomide, and 8–16% for lenalidomide[19]. Almost half those surveyed (46.4%) thought that VTE affected less than 5% of patients with myeloma but 28.6% felt that it affected 10-19% of patients. This discrepancy may be due to some centres treating small numbers of patients but suggests that many underestimate the burden of disease. A quarter used some type of thromboprophylaxis in all their patients. There was no consensus on who should get thromboprophylaxis other than those on immunomodulatory agents in combination with chemotherapy or steroids or those who are high risk for VTE, aside from their myeloma. Disease burden was not considered by most when risk stratifying patients. A variety of thromboprophylactic agents were used. Despite not being advocated by guidelines, a small proportion had used fixed low dose warfarin, dabigatran and rivaroxaban. The lower prophylactic doses of Low Molecular Weight Heparin (LMWH) (Tinzaparin 3500 units/Enoxoparin 20mg) were commonly used

despite higher doses being recommended in cancer patients. Perceived efficacy, ease of administration and myeloma treatment regimen had the greatest influence on haematologists when choosing a thromboprophylactic agent. Cost appeared to have little influence. Bleeding was only rarely considered a problem and no haematologist reported experience of a major bleed.

Myeloma is predominantly a disease of the elderly with a median age at diagnosis of 71 years[20]. Advancing age and its frequently associated multi-morbidities are risk factors for more severe VTE with a higher proportion of PE over isolated DVT and increased mortality[21]. VTE often present atypically in the elderly, making them difficult to identify[22]. Retrospective registries have shown that elderly patients are less likely to be prescribed thromboprophylaxis[23]. Multimorbity not only influences whether or not a patient is prescribed thromboprophylaxis but what agent the patient receives. Oral agents such as aspirin are more attractive than subcutaneously administered agents such as LMWH given their ease of administration and low cost. Co-morbidities such as arthritis can make the self administration of injections difficult, thereby decreasing adherence. These issues need to be taken into account when formulating a thromboprophylaxis strategy. Clinical decision support systems have been used with great effect for the implementation of thromboprophylactic strategies as they efficiently incorporate VTE prevention into provider work flow and have been shown to reduce the number of symptomatic VTE episodes without increasing the frequency of VTE prophylaxis-associate major bleeding[14]. These interventions should ideally be mandatory[24]. While this has mainly been demonstrated in the in-patient setting, it could be effectively transferred to the outpatient chemotherapy setting where patients are frequently reviewed.

The findings in this study should be considered in the light of potential limitations due to the study design. The self-administration of the survey may have lead to misinterpretation of questions but it is hoped that this was limited due to the initial piloting of the survey. Self-reporting may have led to response and selection bias. While the survey was anonymous, some respondents did include identifying details in their responses allowing the authors to conclude that responses were obtained from a variety of centres. This means that a cross-section of opinions has been obtained, limiting the non-response error. Another limitation was that a non-validated questionnaire was used, since validated questionnaires about this subject were not available. While there is no agreed standard for the minimal acceptable response rate in a survey, a response rate of greater than 70% is considered good[25]. Strong evidence from numerous high quality trials supports thromboprophylaxis in selected high risk patient populations such as patients with myeloma. Appropriate risk stratification is necessary to ensure that the associated hazards of thromboprophylaxis are minimized. Given that more than half of respondents were not using published guidelines to direct thromboprophylaxis in patients with myeloma, there is a role for a national guideline which is based on currently published guidelines with significant stakeholder contributions.

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Characterization of Comorbid Factors in Hip Fracture related In-Hospital Mortality

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Abstract
It is important to delineate factors which influence in-hospital mortality rates following a hip fracture. The current study aimed to identify the nature and frequency of comorbidities prevalent in this patient cohort. A retrospective chart review of cases of in-patient mortality following admission for a hip fracture was performed. These cases (n=127) were characterized for comorbidities, complications, medical status indicators, and other contributory factors. Cardiovascular 104(81.9%), respiratory 66(52.0%), genitourinary 41(32.3%), psychiatric 41(32.3%), vascular 40(31.5%), and gastrointestinal 40(31.5%), are the physiological systems, most commonly associated with comorbidity amongst hip fracture patients who succumb to in-hospital mortality. Renal failure, pneumonia, sepsis, myocardial infarction, congestive cardiac failure (CCF), respiratory failure, and Clostridium *difficile* infection are conditions which are associated with postoperative complications leading to in-patient mortality. Analysis of medical status indicators illustrated an inverse correlation between ASA scores and postoperative survival time, in this cohort of hip fracture patients (R^2 = 0.9485).

Introduction

Hip fractures are a significant cause of morbidity and mortality worldwide. There are an estimated 1.6 million osteoporotic hip fractures a year, with the majority of these fractures occurring in the developed countries within Europe and North America[1]. The incidence of hip fractures in Ireland is expected to increase by 100% by the year 2026[2]. Despite advances in perioperative medical management, in-hospital mortality rates are persistently high. Several variables have been implicated in hip fracture related mortality include factors such as preoperative comorbidities, postoperative complications, age, gender, mental functioning, mobility, time to surgery and medical status indictors; such as American Society of Anesthesiologists (ASA) score, Charlson Comorbidity Index (CCI), and Barthel Index[3-17]. Many of these factors have been studied in the setting of post-operative survival at 30 days to years following the hip fracture. However, there are a limited number of studies illustrating specific high risk comorbidities or postoperative complications which are implicated with in-hospital mortality[8,13,15,16]. This is particularly true for those co-morbid conditions prevalent specifically in the Republic of Ireland. It's important to ascertain why these patients are dying in hospital and to assess what can be done in order to circumvent this mortality rate. In order to address these issues the current investigators aimed to analyse the most prevalent comorbidities and postoperative complications presenting in a cohort of patients who died following a hip fracture. Furthermore, the efficacy of medical status indicators in predicting the likelihood of in-patient mortality was assessed. In doing so, it was hoped to identify high risk comorbidities in hip fracture patients. This information may be useful in predicting which patients are at greater risk of in-hospital mortality. These factors may serve as valuable prognostic indicators in patients presenting with hip fractures.

Methods

The study was undertaken in a large university hospital / Level 1 trauma centre in Ireland. All relevant data was retrospectively identified using the Hospital In-Patient Enquiry (HIPE) scheme. Study participants were all patients who presented between January 2003 and December 2009, and died in-hospital following admission for an acute hip fracture. Retrospective chart review was conducted and various patient parameters were recorded including age, gender, date of birth, date of admission, length of stay, time to surgery (from A&E admission), preoperative comorbidities, preoperative ASA score, post-operative complications, and time to death. Using this data, the most prevalent systemic disease present in this cohort of patients, was analysed. Furthermore, most prevalent pathologies in this patient cohort were determined as they pertained to postoperative complications and ultimately, death.

Medical status indicators provide insight into fitness for surgery and likelihood of post-operative complications. Such medical status indicators include ASA score, Charlson Comorbidity Index (CCI), and time to surgery. Several sources support that ASA score has prognostic value in determining which patients are high risk for morbidity and mortality following a hip fracture[3,4,6,9,13,14,18]. These medical status indicators were applied to the cohort studied to establish their efficacy in predicting the patient's clinical outcome. Preoperative ASA scores, time to surgery, and CCI were determined from patient charts and operation/anaesthetist notes[19]. In order to analyse these medical status indicators we

used post-operative survival time and number of post-operative complications as measurable outcomes. These outcome values were either available through discharge summaries, HIPE records, or were calculated based on recorded chart data. Statistical significance ($p < 0.05$) was tested using multivariate analysis and univariate ANOVA.

Results

Patient Demographics

Over the period of 2003 to 2009 there were 2,108 hip fracture admissions. Of these admissions, 182 progressed to in-hospital mortality. This corresponds to an in-hospital mortality rate of 8.6%. Exclusion criteria included incomplete medical notes, poor previous medical records, and patients suffering from poly-traumatized / non-osteoporotic hip fractures. This resulted in comprehensive chart review of a total of 127 in-hospital mortality cases following hip fracture (n=127). Mean patient age was 84.0 years old. Overall gender distribution for males and females was 32.3% and 67.7 %, respectively. Average time to surgery was 2.3 days. Average post-operative survival was 21.4 days.

Table 1 Comorbidity and Complication prevalence in hip fracture patients suffering in-hospital mortality

Systemic Comorbidity	No. (% of Total Cases)
Cardiovascular	104 (81.9)
Endocrine	33 (26.0)
Gastrointestinal	40 (31.5)
Genitourinary	41 (32.3)
Malignancy	21 (16.5)
Neurological	39 (30.7)
Psychiatric	41 (32.3)
Respiratory	66 (52.0)
Sepsis	18 (14.2)
Vascular	40 (31.5)
No. of Comorbidities:	
0	5 (3.9)
1	7 (5.5)
2	12 (9.4)
3	25 (19.5)
≥4	79 (61.7)
Systemic Postoperative Complications	**No. (% of Total Cases)**
Cardiovascular	44 (34.6)
Endocrine	0 (0)
Gastrointestinal	33 (26.0)
Genitourinary	40 (32.5)
Malignancy	0 (0)
Neurological	0 (0)
Psychiatric	3 (2.4)
Respiratory	60 (47.2)
Sepsis	21 (16.5)
Vascular	10 (7.9)
No. of Complications:	
0	10 (10.6)
1	13 (13.8)
2	17 (18.1)
3	15 (16.0)
≥4	39 (41.5)

Comorbidities and Complications

Patients in this cohort typically presented with several pre-existing comorbidities upon admission. The average number of pre-operative comorbidities was 4.6. Only 3.9% of patients had no underlying comorbidities at presentation (Table 1). Over 61% of the patients had greater than four comorbidities at presentation (Table 1). Similarly this cohort of patients suffered from high rates of postoperative complications. The average number of postoperative complications was 3.0 and only 10.6% of patients who underwent surgery had no reported postoperative complications (Table 1). Over 41% of patients experienced greater than four postoperative complications (Table 1). The comorbidities and complications present in this cohort span numerous organ systems. The prevalence of systemic comorbidity and complications for each organ system is listed in Table 1 and illustrated in Figure 1.

The most commonly involved physiological systems manifesting comorbid conditions were Cardiovascular (81.9%), respiratory (52.0%), genitourinary (32.3%), etc. (as listed in Table 1). The systems most frequently involved in post-operative complications were respiratory (47.2%), cardiovascular (34.6%), genitourinary (32.5%), etc. (as listed in Table 1). The distribution of these systemic comorbidities and postoperative complications is illustrated in Figure 1. Based on the prevalence of systemic comorbidities and the resultant postoperative complications, one can infer which systemic disease affords a higher risk of in-hospital mortality following a hip fracture. The data illustrated in Figure 1 suggests that respiratory, cardiovascular, genitourinary, gastrointestinal systems and sepsis are the highest risk systemic diseases associated with in-hospital mortality. These are the most

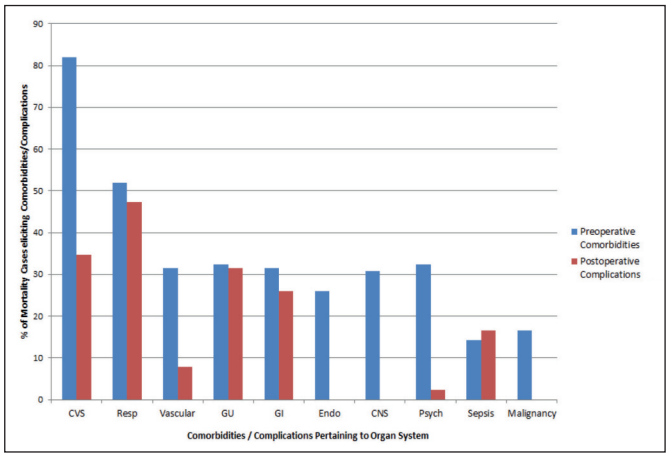

Figure 1

comorbid systems and the systems in which the most postoperative complications arise in this cohort.

In order to ascertain which specific pathologies are most implicated in this cohort, the most commonly occurring comorbidities and complications were determined. This data is illustrated in Table 2. The most commonly presenting comorbidities implicated in patients suffering in-patient mortality were hypertension (39.4%), atrial fibrillation (27.6%), congestive cardiac failure (25.2%), renal failure (24.4%), etc. (as listed in Table 2). The most commonly implicated postoperative complications were renal failure (26%), pneumonia (17.3%), sepsis (16.5%), etc. (as listed in Table 2). These comorbidities contributed to the manifestation of postoperative complications, which thereby influenced the likelihood of in-hospital mortality. Thus, these particular pathologies are likely associated with higher risk of in-hospital mortality following a hip fracture.

Table 2 Most prevalent comorbidities and post-operative pathologies

Comorbidity	No. (% of Total Cases)
Hypertension	50 (39.4)
Atrial Fibrillation	35 (27.6)
Congestive Cardiac Failure	32 (25.2)
Renal Failure (Acute and Chronic)	31 (24.4)
COPD	25 (19.7)
Previous Myocardial Infarction	24 (18.9)
Pneumonia	19 (15.0)
Dementia	19 (15.0)
Sepsis	18 (14.2)
Respiratory Tract Infection	17 (13.4)
NIDDM	16 (12.6)
Idiopathic Hypertrophic Disease	15 (11.8)
Cerebral Vascular Accident	14 (11.0)
Postoperative Complications	**No. (% of Total Cases)**
Renal Failure (Acute and Chronic)	33 (26.0)
Pneumonia	22 (17.3)
Sepsis	21 (16.5)
Myocardial Infarction	20 (15.7)
Congestive Cardiac Failure	20 (15.7)
Respiratory Failure	11 (8.7)
C. diff infection	11 (8.7)

COPD - Chronic Obstructive Pulmonary Disease
NIDDM - Non-Insulin dependent Diabetes Mellitus
C. diff - Clostridium difficile

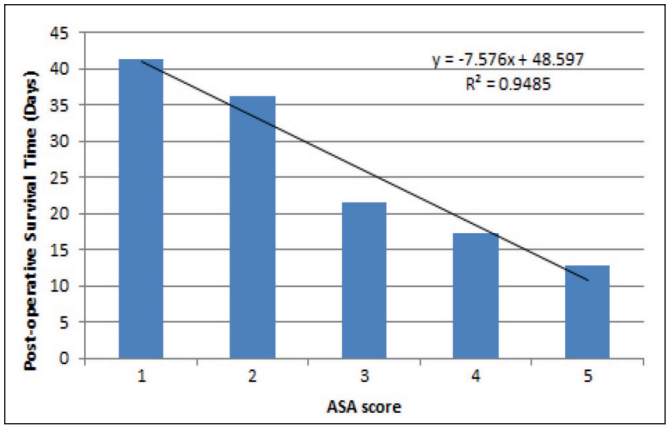

Figure 2

Medical Status Indicators
There was a strong inverse correlation between ASA score and post-operative survival (R2 = 0.9485). This is illustrated in Figure 2. This indicates that increased ASA score (deteriorating medical status) is associated with decreased post-operative survival time and thus an increased chance of in-hospital mortality. There was no discernible associations between ASA score and number of postoperative complications. CCI had no discernible associations with postoperative survival or number of postoperative complications in this cohort. To further analyse this data multivariate analysis with univariate ANOVA was conducted using the same measureable outcomes. However this analysis did not yield statistically significant results for ASA score or CCI ($p >> 0.05$).

Discussion

This study demonstrated that, in this cohort the average number of existing comorbidities upon admission was 4.6. The average number of postoperative complications in this cohort was 3.0. This is far greater than the number of complications reported in studies assessing early mortality following hip fractures[12]. This underscores the prominence of postoperative complications in this cohort and implicates postoperative complications as a cause of in-hospital mortality. Furthermore, this reaffirms that increasing comorbidity may result in a greater risk of in-hospital mortality following a hip fracture. Comparison of this data to comorbidities/complications in a cohort of patients who did survive hip fractures would serve useful in founding concrete data to support this notion.

The incidence of systemic comorbidities and systemic complications resulted in respiratory, cardiovascular, genitourinary, gastrointestinal systems, and sepsis as being the most frequently involved systemic diseases implicated in this cohort. This is consistent with previous studies[7,12,15]. However there is limited data suggesting that sepsis plays a role in early mortality following a hip fracture[16]. It was found that sepsis was a substantial contributor of comorbidity and complications associated with in-hospital mortality. This association requires further investigation in order to fully understand the interplay between sepsis and risk of in-hospital mortality. Upon analysis of specific pathologies associated with in-patient mortality, it was found that the following conditions were specifically implicated: renal failure, pneumonia, sepsis, myocardial infarction, congestive cardiac failure, respiratory failure, and Clostridium difficile infection. These pathologies were the result of pre-existing comorbidities manifesting into complications which ultimately culminate in patient death. Thus, these complications are 'red flags' identifying high risk patients. These findings are consistent with previously published data suggesting that renal failure, pneumonia, myocardial infarction, congestive cardiac failure, respiratory failure are involved in patient mortality following a hip fracture[7,12,15,16]. However these previous studies found no association between sepsis or Clostridium difficile infections as causes of mortality following hip fractures. This requires additional investigation to further substantiate these findings. A comparison of the prevalence of these comorbidities and complication in surviving hip fracture patients would serve useful.

Medical status indicators are useful predictors of mortality following a hip fracture, and offer prognostic value in patient assessment. Several groups have suggested that ASA scores and CCI are useful prognostic indicators of patient medical status[3-6,9,11,13-15,18]. However, much of this analysis involved long-term mortality following hip fracture. There are limited studies which have demonstrated the relevance of ASA scores in specific relation to in-hospital mortality. The current data suggest a negative correlation between ASA score and post-operative survival time with particular relation to in-patient mortality. This supports the notion that ASA score is a useful tool in assessing patient risk of in-hospital mortality subsequent to a hip fracture. Although a similar analysis was conducted on CCI, no such association was established. Additional multivariate and univariate ANOVA analyses were conducted for measureable outcomes and ASA Score / CCI. No statistical significant was demonstrated within this data set. This is likely to be due to the low power of the study and highly variant spectrum of patient presentation, and disease course. These factors require additional study in the setting of in-hospital mortality patients in order to further substantiate these findings.

In-hospital mortality of hip fracture patients remains a difficult problem for physicians in general. Despite their greatest efforts, the rates of in-hospital mortality remain high. In this analysis, the current investigators have presented data which suggest that patients suffering from systemic comorbidities and complications of respiratory, cardiovascular, genitourinary, gastrointestinal systems, and sepsis are at high risk of in-hospital mortality. Perhaps these patients require aggressive preoperative optimization and postoperative medical management. This is particularly true for patients at risk of renal failure, pneumonia, sepsis, myocardial infarction, congestive cardiac failure, respiratory failure, and Clostridium difficile infection. Furthermore, higher ASA scores, in this patient cohort, were shown to be associated with an increased risk of in-hospital mortality following hip fracture. Thus, ASA scores carry prognostic value and can aid in assessing the risk of in-hospital mortality amongst hip fracture patients.

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Clinical Guideline Adherence by Physiotherapists Working in Acute Stroke Care

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Abstract
The publication of the Irish Clinical Guidelines for Stroke in 2009 provided healthcare professionals with an essential tool for improving stroke services. The aim of this study was to identify the degree to which Senior Physiotherapists in acute stroke care adhered to the Irish Clinical Guidelines for Stroke. This was a cross-sectional study, a postal or online survey was distributed to 31 Senior Physiotherapists working in acute stroke care, 23 responded, achieving a 74% response rate. There was excellent compliance with guidelines for the completion and documentation of full assessment within 5 working days of admission 19 respondents (82.6%), and the involvement of the patient in goal setting 19 (82.6%). Poor compliance was reported in relation to the provision of early assessment 10 (43.5%) and adequate rehabilitation intensity 9 (39%). The main barriers to compliance in these areas were organisational in nature.

Introduction

Stroke is the third leading cause of death and the most common cause of severe adult disability in Ireland[1]. Approximately 10,800 new strokes or transient ischaemic attacks occur each year at a rate of one per hour[1]. This has resulted in a total prevalence of between 28,000 and 47,000 stroke survivors at an estimated annual cost of between 400 and 800 million euro[2]. However, despite the considerable burden posed by stroke in Ireland the Irish Heart Foundation National Audit of Stroke Care (INASC) revealed significant deficiencies in services throughout the healthcare system[3,4]. The need for organised stroke services was emphasised in the National Cardiovascular Health Policy[5] and has resulted in the establishment of the Health Service Executive (HSE) National Clinical Programme for Stroke which aimed to deliver best-quality services by 2015[1]. Improvements in services have been reported since INASC was published[1] but no further audit has been carried out apart from a survey in 2010, which focused on hospital emergency stroke services[6]. There has been some qualitative evaluation of the perceived barriers and facilitators in implementing clinical guidelines in stroke in the Irish setting.[7,8]

A crucial component of the healthcare system quality improvements was the publication of the National Clinical Guidelines and Recommendations for the Care of People with Stroke and Transient Ischaemic Attack[9] which provided healthcare professionals with an essential tool for providing best-quality care. The prioritisation of guideline adherence by physiotherapy professional bodies[10] and by national stroke organisations[1] in combination with the burden posed by stroke and deficiencies in services has emphasised the need for Irish physiotherapists to develop this area of practice. The guidelines also provide a standard against which physiotherapy services can be measured and around which future services can be modelled. The information regarding guideline adherence by stroke physiotherapists at an international level is minimal and mainly comprises small sections of larger multidisciplinary studies[11,12] with the exception of a recent study of Dutch physiotherapists working in acute stroke units[13]. A profession specific audit of guideline adherence by stroke physiotherapists was conducted in the United Kingdom (UK) in 2006 which provided more detailed information in this area[14] and a recent Irish qualitative study[7]. The aim of this study was to identify the degree to which Senior Physiotherapists working in acute stroke care in Ireland adhered to the clinical guidelines and to explore the barriers to adherence experienced by these physiotherapists.

Methods

This was an observational cross-sectional country-wide study utilising a self-completed original survey. The Senior Physiotherapist responsible for the acute stroke service in each of the acute hospitals in Ireland was invited to complete the survey. The inclusion criteria required participants to be at a minimum of Senior Grade, to be responsible for the acute stroke physiotherapy service and directly involved in the treatment of acute stroke patients from time of onset. The exclusion criteria included those below Senior Grade and those who were not directly involved in the treatment of acute stroke patients. A list of the 33 acute hospitals involved in the HSE National Clinical Programme for Stroke was obtained. Between November 2011 and January 2012 the researcher telephoned each hospital to make contact with the appropriate Senior Physiotherapist and to

ensure that they met with the inclusion criteria. This resulted in 2 of the 33 physiotherapists being excluded from the study due to the absence of an acute stroke physiotherapy service in these hospitals. The purpose of the research was outlined to the remaining 31 physiotherapists and they were invited to participate by completing the survey.

A pilot study was conducted in November 2011 to ascertain the amount of time it took to complete the survey and any further considerations regarding it use. All of the physiotherapists who were contacted agreed to complete the survey and were given a choice of completing the survey either as a hard copy or online. The survey was then completed voluntarily and returned anonymously in the stamped address envelope or online. A reminder letter was sent two weeks later in order to optimise the response rate. As the surveys were returned anonymously for reasons of confidentiality, reminders were sent to all participants. Due to the small population size, which comprised 31 physiotherapists, sampling was not indicated and all members of the population were invited to participate. A response rate of 60% was targeted to ensure that the findings would be representative of the majority of physiotherapists responsible for acute stroke physiotherapy services in Ireland. Ethical approval was granted by the Royal College of Surgeons in Ireland. The survey was designed using the online SurveyMonkey® tool. An original survey was required as there were no existing research tools already available which would address the aims of this study. Surveys are usually subject to psychometric review but this was beyond the scope of this study. The survey was divided into 22 sections and included 73 questions. All surveys were assigned identification numbers and codes to each question in the survey which then became cells in an Excel data file. Results were analysed in Statistical Package for the Social Sciences (Version 18).

Table 1 Characteristics of Respondents (N=23)

Characteristics	N	%
Physiotherapy Grade:		
Senior Grade	18	78.3
Acting Senior	2	8.7
Staff Grade	3	13
Years since qualified		
5 to 10	13	56.5
11 to 15	5	21.7
More than 15	5	21.7
Years of experience with Stroke Patients		
Less than 1	1	4.3
1 to 4	10	43.5
5 to 10	10	43.5
11 to 20	2	8.7
Highest Qualification		
Undergraduate Qualification (Degree/Bachelor)	17	73.9
Postgraduate Diploma	1	4.4
Masters Degree	5	21.7

* due to rounding percentages may not equal

Results

Response Rate

The survey was sent to 31 physiotherapists, of which 23 responded representing a 74% response rate and analysis was conducted on all returned surveys. Of the 15 surveys sent by post, 10 (67%) were returned and 13 (81%) of the 16 surveys which were sent by email were returned online.

Characteristics and Work Settings of Respondents

The majority (87%) of respondents were either Senior or Acting Senior Physiotherapists and had qualified between five and ten years previously (56.5%). None of the respondents had been qualified less than five years and only one respondent reported having less than one year of experience with stroke patients. Only 26% of respondents had completed a Postgraduate Diploma or Master's programme (Table 1).

Guideline Adherence

Use of the Stroke Guidelines by physiotherapists was high with 22 (96%) of the 23 respondents reporting using these guidelines. Respondents reported moderate to excellent compliance levels with some guidelines relating to patient care and assessment and with all guidelines relating to rehabilitation (Table 2). However respondents reported only 43.5% compliance with the completion of initial assessment within 48 hours of admission, with the most commonly cited barriers to adherence in this case being weekend admissions and delayed physiotherapy referrals. We did not ask respondents if they had a dedicated stroke MDT. Only 39% of respondents reported that all patients received a minimum of 45 minutes of physiotherapy each day and commented that staffing and time constraints were the most commonly reported barriers.

Discussion

Physiotherapists working in acute stroke care in Ireland reported excellent (>80%) compliance with guidelines relating to the completion of their assessment within five working days, the early mobilisation of patients, the use of standardised assessment tools, regular communication with patients regarding their physiotherapy and the involvement of the patient in goal setting. Poor compliance with guidelines relating to the provision of early assessment and adequate intensity of rehabilitation were reported to be related to organisational barriers but this requires further evaluation in order to determine the specific causes of lower reported adherence levels in these areas. Compliance with the recommendation that patients receive their initial physiotherapy assessment within 48 hours of admission was almost identical to that reported in INASC[3] at 43.5% and 43% respectively. However, INASC investigated whether initial assessment took place within 72 hours of admission. Therefore, the absence of a physiotherapy service during the weekend would not have been a factor in a delay as patients admitted directly before or during the weekend could still have been assessed within 72 hours of admission. However, the respondents in this study reported that weekend admissions were the most common reason for the delay as the 48 hour timeframe means that it would not have been possible to assess those admitted directly before the weekend within the recommended time. Respondents also reported that

Table 2 Guideline Adherence Levels (N=23)

Guideline Section:	Guidelines	Compliance Levels		
		Compliant n (%)	Non-compliant n (%)	Sometimes compliant n (%)
PATIENT CARE AND ASSESSMENT	Initial assessment should be carried out within 24 to 48 hours of admission	10 (43.5)	13(56.5)	N/A
	Full assessment including goal setting should be completed and documented within 5 working days	19 (82.6)	4(17.4)	N/A
	Patients should be mobilised as soon as possible within the first 3 days after stroke	22(95.7)	0	1(4.3)
	Patients should receive a minimum of 45 minutes of physiotherapy daily	9(39)	3(13)	11(48)
REHABILITATION	Clinicians should use standardised, valid assessment tools to evaluate stroke-related impairments and functional status	19(82.6)	1(4.4)	3(13)
	Stroke rehabilitation staff should have specialist expertise in both stroke and rehabilitation	18(78.3)	5(21.7)	N/A
	Patient communication should take place frequently regarding impairments, goals and reasons for stopping treatment	23(100)	0	0
	Family communication should take place frequently regarding impairments, goals and reasons for stopping treatment	15 (65.2)	1(4.4)	7(30.4)
	Goals with specified, time-bound measureable outcomes should be set	16(69.6)	0	7(30.4)
	Goal setting should be discussed with the patient and patients should be encouraged to participate in goal setting	19(82.6)	0	4(17.4)

N/A: Not Applicable – this is stated for any section where this response was not provided as an option in the survey

delayed physiotherapy referral was a factor in patients failing to receive their initial assessment within 48 hours.

This may be a reflection of a lack of coordinated stroke services which have already been highlighted[3]. Compliance levels in INASC were based on chart audit whereas this study was based on the use of a survey. Chart audit may result in an underestimation of actual clinical practice, whereas surveys may result in an overestimation of what actually occurs in practice.[15,16] Although the timeframes investigated were different, meaning that the compliance levels in this study may represent an improvement in compliance since INASC, the different methodologies used mean that it is not possible to make a direct comparison. The percentage of Irish physiotherapists reported to be carrying out their initial assessment within the recommended timeframe continues to fall significantly short of the compliance levels reported in the UK[11] and Australia[12] which is likely to be a reflection of the lack of development of Irish stroke services in comparison to those of other countries. Only 39% of respondents reported that all patients received at least 45 minutes of physiotherapy each day. Poor compliance with this guideline was accounted for by respondents as being due to poor staffing levels and time constraints. These organisational limitations are a reflection of the underdeveloped Irish stroke services[3] within which physiotherapists must attempt to deliver high quality care.

One of the limitations was the use of a survey to measure guideline adherence. Surveys rely on the reported or perceived behaviours of respondents which may be different to what is actually occurring in practice and may result in an overestimation of reality.[15,16] Another limitation of this study was the lack of a qualitative component to the methodology. Although the survey allowed respondents to add free text comments, there was no opportunity to discuss their responses. Therefore, it was not possible to ascertain the reasons for poor compliance where applicable and Stevens and Beurskens[17] found that interviews and discussions generated much more detailed information than written enquiries. Recently, Donnellan et al[7,8] used qualitative focus groups to identify barriers and facilitators to implementing Irish stroke guidelines. Although there was a high response rate at 74%, it is possible that the results of the study were biased due to the fact that physiotherapists who were most compliant may have been more likely to respond. Therefore, the results may not be representative of all physiotherapists working in acute stroke care in Ireland.

The findings of this study revealed that physiotherapists working in acute stroke care demonstrated high levels of adherence to most clinical guidelines for stroke but that the provision of early assessment and adequate rehabilitation intensity were reported to be below the recommended standards. We did not explore staffing levels in detail for the units. The majority of the barriers to guideline adherence were organisational in nature, thereby demonstrating that physiotherapists working in acute stroke care in Ireland strived to deliver best quality care within the limitations of inadequate services and resources. The level of postgraduate qualifications was also low. Future research should be targeted at ascertaining the underlying reasons for lower compliance with a view to developing a strategy to optimise guideline adherence, which will ultimately result in better quality care and improved outcomes for Irish stroke patients.

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First Bilateral Lobar Lung Transplant in Ireland: Advanced Operative Strategies in Lung Transplantation

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Abstract
Lobar lung transplantation is an option that provides the possibility of transplantation of small size recipients with size-mismatch donor lungs by surgically reducing the size of donor lungs. We report our first experience of bilateral lobar lung transplantation of big donor lungs, in a small size urgently listed recipient, after size reduction. A 24 years old girl with end stage cystic fibrosis received the bilateral lobar lung transplant. She made very good recovery postoperatively and was discharged home two weeks following surgery.

Introduction

Lung transplantation is accepted treatment option in selected patients with end stage lung disease. Donor shortage is the major obstacle in lung transplantation and especially in small body size recipients. These factors result in small sized recipients having longer waiting times and potentially increased risk of death on lung transplant waiting lists. Therefore advanced operative strategies have been developed to manage this patient group[1].

Case Report

The recipient was a 24 years old girl with end stage cystic fibrosis (146 cm, 44 kg, body mass index 20 kg/m2) diagnosed since birth. During the preceding two years, she experienced a significant deterioration in her clinical condition with frequent hospital admissions with recurrent chest infections, permanent oxygen dependence and type II respiratory failure requiring intubation and ventilation on a number of occasions. Forced expiratory volume in one second (FEV1) and forced vital capacity (FVC) were 0.60L, (23% of predicted) and 1.16 L, (37% of predictive), respectively. The donor was a female (170 cm, 82 kg) non-smoker in her 30's with intracerebral bleeding.

A standard approach was used with clamshell thoracotomy via the 5th intercostal space. The operation was performed on extra corporeal life support (ECLS) with central arterial cannulation through the ascending aorta and venous drainage through right femoral vein, as patient did not tolerated the single lung ventilation. Donor lungs were prepared and down sized on the back table with excision of both upper lobes from right and left lungs. All the vascular and bronchial structures were divided with Endo GIA staples. A right pneumonectomy was performed first and the donor right lung (middle and lower lobes) were implanted with bronchus, pulmonary artery and pulmonary vein end-to-end anastomosis with 4/0, 6/0 and 5/0 prolene respectively. Similarly left lower lobe was implanted on left side after left pneumonectomy with similar technique. Patient came off (ECLS) easily and haemostasis was secured. Chest was closed in standard fashion with two drains on each side.

Patient received our standard protocol of immunosuppressive therapy with Tacrolimus, Mycophenolate Mofetil, and Prednisolone including induction therapy with Basiliximab and prophylaxis against pneumocystis carinii, cytomegalo virus and fungal infections. Antibiotics therapy was adjusted according to sensitivities from preoperative sampling of recipient and donor bronchi before implantation. Patient was extubated on day two postoperatively and was discharged home after two weeks.

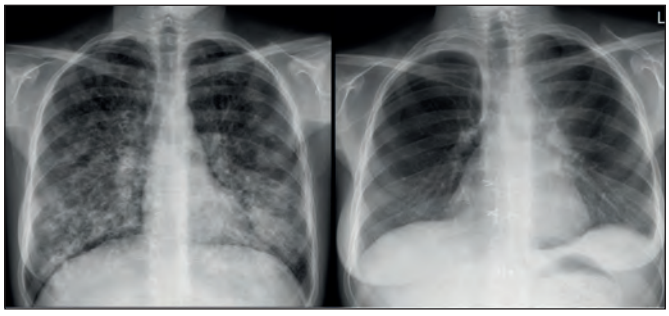

Figure 1 Chest X-Rays pre and post transplant. On the left, chest x-ray with the end stage cystic fibrosis changes while the x-ray on the right post bilateral lobar lung transplant

Discussion

The Irish National lung transplant programme was started in 2005 and so for 83 lungs have been implanted successfully with 30-day in-hospital mortality of (n=1) 1.20%. Thirty-four were double while 49 single lung transplants. Donor–to-recipient lung size matching is an important and challenging aspect of lung transplantation. Oversized lung grafts can potentially lead to atelectasis and impaired airway clearance due to bronchial anatomy distortion. Undersized grafts cause lung hyper-expansion and might limit exercise tolerance[2]. Decreased supply of donor organs and increased number of potential recipients, especially small body size patients, has driven interest towards the use of marginal donors, non-heart beating donors and living donors. Downsizing of big donor lungs by lobectomy or non-anatomical resections or split lung transplants are specific options to increase the donor pool, especially for small recipients with significant donor-recipient size mismatch[3]. Mortality on the waiting lists for short stature patients is quoted as high up to 25%[4]. In 1994, Bisson and colleagues published the first report of lobar lung transplant[5]. Since then different groups have published their results of lobar lung transplants. Keating et al showed overall survival at 1 and 5 years of 82% and 64%[6], Inci et al 1 and 5 years survival of 82% and 64% respectively[7]. They have demonstrated that bilateral lobar lung transplantation has short and long-term outcomes comparable with those of standard bilateral lung transplantation. Similar survival results been published by Marasco & colleagues[8].

In conclusion, utilizing lobar lung transplantation can safely increase lung transplantation numbers, in small adults and teenagers. The use of lobar lung transplantation and other lung volume reduction techniques in the National Lung Transplantation program has ensured the maximisation of organ utilisation and has not disadvantaged smaller lung volume recipients.

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Caecal Diverticulitis: A Rare Cause of Right Iliac Fossa Pain

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Abstract
We present a case of a young boy with an unusual cause of right iliac fossa pain. His history, examination and laboratory investigations suggested a diagnosis of acute appendicitis. However pre operative abdominal CT revealed an inflamed solitary caecal diverticulum and a normal appendix. He was subsequently treated conservatively and recovered well, saving him from undergoing a general anaesthetic and abdominal surgery.

Introduction

Right iliac fossa pain is one of most common general surgical referrals from the emergency department. Various medical, surgical and gynaecological conditions can present with this symptom. History and examination play a vital part in the diagnosis and provide the basis for further investigations and management.[1] We present an unusual cause of right iliac fossa pain which closely mimicked acute appendicitis.

Case Report

A 20 year old boy presented to the emergency department with a 2 day history of right iliac fossa pain that was constant in nature and progressively worsening in intensity. There was no radiation from loin to groin. It was accompanied by nausea, vomiting and anorexia. He had no other bowel or genitourinary symptoms and was otherwise systemically well. On examination he was tachycardic but a-febrile. There were signs of localized peritonism in the right iliac fossa. His laboratory investigations revealed white cell count of 18.5x109 /Land mildly raised C reactive protein. Moreover his urine dipstick was clear. The clinical impression was of acute appendicitis but due to his fatty abdominal wall an abdominal CT scan was carried out. The scan identified the appendix which was normal. It showed that the cause of his symptoms and signs was an inflamed solitary anterior caecal diverticulum. The patient was treated conservatively with intravenous antibiotics. His pain and abdominal signs resolved after two days and he was discharged home on oral antibiotic to complete the course. He has been well on follow up.

Discussion

Caecal diverticultis is reported to occur uncommonly in the Western world.[2] Caecal diverticulae may be of two types. The true diverticula are usually solitary and are congential in origin, comprising all layers of the bowel wall whereas false diverticula are out pouching of the mucosa and submucosa through the muscle layer.[3,4] The symptoms and signs of caecal diverticultis closely resemble acute appendicitis and hence it is difficult to tell the two apart clinically. It is mostly discovered at the time of exploration for planned appendectomy.[5] Pre operative imaging could help identify caecal diverticultis as the cause of right iliac fossa pain rather than appendicitis. Ultrasound has been reported to be 100 % accurate in distinguishing between acute appendicitis and right sided colonic diverticultis.[6] CT has an accuracy of 93 to 98 percent in diagnosing appendicitis.[7] CT will also effectively differentiate right sided colonic diverticulitis from carcinoma.[8]

There are various treatment options for caecal diverticultis. The most appropriate therapeutic modality depends upon the clinical scenario and may include conservative management, diverticulectomy, limited ileo caecal resection or right hemi-colectomy.[4] Treatment with intravenous antibiotics alone is recommended by some authors especially if the diagnosis is confirmed pre operatively.[4] However, if exploration is done for suspected appendicitis, local resection or inversion of the diverticulum is considered superior to appendectomy with post op antibiotics only.[5] Some reports have also advocated aggressive resection for caecal diverticulitis since less than 40% of their patients treated conservatively had no recurrence during follow up.[9] Right Hemicolectomy should be limited to cases where either carcinoma cannot be completely excluded or there is extensive caecal phlegmon with multiple diverticulae.[3]

Routine CT for patients with suspected appendicitis has been shown to be overall cost effective as well.[10] Despite evidence for routine pre operative imaging in patients with right sided lower abdominal pain, there are many instances when this is not carried out. This maybe because of lack of capacity, inconvenient timing or convincing clinical evidence of the diagnosis in question. Our aim is not to advocate imaging for every patient with typical clinical diagnosis of appendicitis but to highlight a rare possible diagnosis that can present with similar signs and symptoms and the various treatment options available depending on the clinical scenario.

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Inadvertent Subclavian Artery Cannulation with a Central Venous Catheter; Successful Retrieval Using a Minimally Invasive Technique

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Abstract
A 48-year old lady was referred to our department as an emergency following an unsuccessful attempt at central venous catheter insertion, resulting in cannulation of the subclavian artery. She underwent angiography with removal of the catheter and closure of the arteriotomy using an Angio-SealTM device. While the optimal management of this scenario has yet to be defined, the use of this minimally invasive technique warrants consideration.

Introduction

Central venous catheter insertion is a common procedure, utilized in the management of patients by both medical and surgical specialities. Inadvertent arterial puncture is an important potential complication of this procedure. We report the case of a patient who sustained subclavian artery cannulation and discuss the management of this potentially catastrophic scenario.

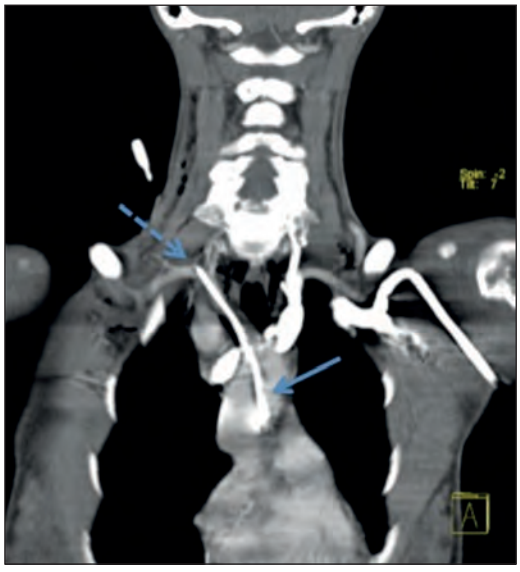

Figure 1 A CT Angiogram demonstrating entry of the catheter into the right subclavian artery (dashed arrow), with it's tip in the ascending aorta (solid arrow).

Case Report

A 48-year old lady with large uterine fibroids underwent a total abdominal hysterectomy with significant intra-operative blood loss. For post-operative monitoring, insertion of a 7.5 Fr central venous catheter was attempted via the right internal jugular vein without ultrasound guidance. Malpositioning of the catheter was suspected and a chest radiograph demonstrated a right-sided pneumothorax with the catheter passing to the left of the expected course, suggesting an arterial puncture. A chest drain was inserted and a CT scan confirmed the catheter entered the right subclavian artery with its tip projecting into the aortic arch (Figure 1).

Following multidisciplinary consultation, it was decided to attempt catheter retrieval by using an endovascular approach. Femoral arterial access was obtained and an angiographic catheter advanced into the thoracic aorta. Angiography confirmed insertion of the central venous catheter into the right subclavian artery immediately distal to the vertebral artery origin, which was seen to be patent. The central venous catheter was removed over a guidewire and an Angio-SealTM vascular closure device was inserted and deployed, effectively sealing the arteriotomy. Selective angiography of the brachiocephalic artery post deployment demonstrated no leakage of contrast at the puncture site (Figure 2). The patient made an uneventful with no long-term sequelae.

Discussion

Cervicothoracic arterial puncture complicates approximately 2.9% of central venous catheter insertions[1], which in most instances is by a small needle and relatively benign[2]. Actual arterial cannulation with a large bore catheter is more serious. This is a rare complication with a reported incidence of 0.2%[1]. The risk is reduced but not excluded with ultrasound guidance[3]. Poor outcomes have been reported with immediate removal of misplaced catheters[4]. Haemorrhage from the subclavian artery is particularly dangerous, as the vessel is difficult to manually compress due to its anatomic location. The optimal treatment of inadvertent subclavian artery cannulation has yet to be defined. Experience is limited to case reports and small case series. Surgical management involves exploration, catheter removal and arterial repair. Surgical access to the subclavian artery is challenging and may be high risk in patients with multiple co-morbidities. A single case report describes the use of Video-assisted thoracic surgery (VATS)[5]. Endovascular treatments include temporary balloon tamponade and/or stent placement[6].

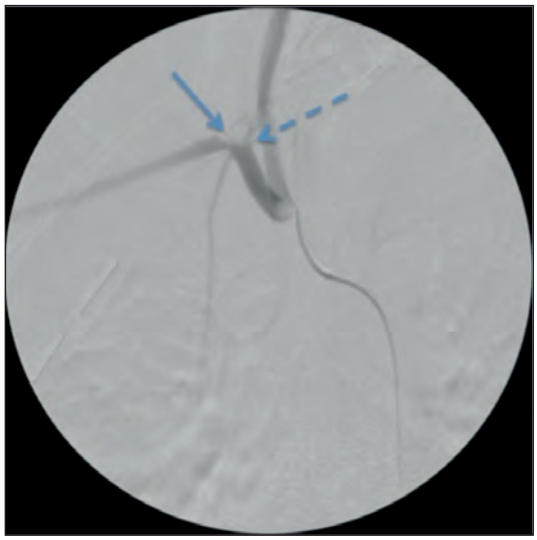

Figure 2 An angiogram, performed immediately post catheter retrieval and Angio-SealTM deployment. A filling defect is evident (solid arrow), made by the Angio-SealTM footplate. The origin of the right vertebral artery is patent (solid arrow)

However right vertebral artery occlusion is a concern with stent insertion.

We utilized a percutaneous vascular closure device. These devices can be suture-based or collagen-based. We used Angio-SealTM (St Jude Medical, St Paul, MN, USA), a collagen-based device. This device has been primarily used to restore femoral artery haemostasis following angiography, however a small number of reports describe its use in the management of iatrogenic subclavian arteriotomies[7-10]. It acts by wedging the arteriotomy site between an anchor suture and a collagen sponge, creating a mechanical seal, which dissolves in 60-90 days. We advocate the employment of additional safety measures. The procedure was performed under angiographic guidance to ensure instant recognition of complications. A balloon catheter was available if necessary to obtain temporary haemorrhage control. The procedure was performed in the operating theatre with a Thoracic Surgeon present, thus an open surgical repair was an option if endovascular techniques failed.

Our report further demonstrates that inadvertent subclavian artery cannulation can be successfully managed with the use of an Angio-SealTM device. While large-number studies evaluating the optimal management of inadvertent subclavian arterial cannulation are required, the use of this minimally invasive technique warrants consideration.

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Medicine & Poetry

In the car driving home from the hospital

The backseat overflows: your overnight case;
two carrier bags, your one-day stay expanded
into seven days and nights of waiting for tests
and answers; two outsize bags from the pharmacy
crammed with only comfort, a green snake
of healing on a blank white ground.

You ask me a question:
And do I have cancer?

Yes.

But, you say,
of the hopeful, manageable kind.

I take my eyes off the traffic to look at you.
The consultant took me aside this morning
before she discharged you into my care,
showed me the scans of your lungs
and brain, the x-ray of your right hip:
her initial prognosis, two years,
has shrivelled to two months.
You catch my eye, look away.

No question.
I keep on driving.

Monica Corish

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The At-risk Medical Student – What More Can We Do?

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To receive CPD credits, you must complete the questions online at www.imj.ie.

Abstract
Securing a place in medical school is extremely difficult– students who are successful all have similar high levels of academic achievement. So why do some students, and not others, have difficulty with the course, and in some cases, leave the programme? Studies on medical school attrition offer valuable insight into why medical students under-perform. Identification of the 'at-risk' student can trigger additional support and early remediation, helping some students remain in their chosen profession.

Introduction

Studies show that 10-15% of medical students experience substantial problems in medical school.[1] Identification of the 'at-risk' student can trigger early remediation and may help some students remain on the programme.[1] Studies evaluating medical school attrition offer valuable insight into the 'at-risk' medical student. A recent meta-analysis[2] reported an average medical school attrition rate of 11.1% (2.4–26.2%). Attrition rate at University College Cork (UCC) medical school (2001-2010) was 5.7%.[3] Having a low attrition rate is important, not least because of the difficulty in securing a place in medical school and the high cost of medical training. A high attrition rate can affect academic reputation and staff morale and may have financial consequences. Most important of all, however, is the personal effect on the individual student. Students who are underperforming place additional demands on resources and faculty time. There is also evidence that poor students may become poor doctors.[4]

Causes of medical school attrition

A number of factors have been shown to be associated with medical school attrition. These include change of mind about career, academic difficulty, psychological and physical ill-health and social isolation.[1-3] Recognized risk factors for poor performance include non-white ethnicity[1] and male gender.[1] Overseas students may have language and communication difficulties, loneliness and social isolation, and cultural reticence in admitting to difficulties and seeking help.

Academic Difficulty

Academic difficulty was documented in 55% of medical students who dropped out at UCC.[3] However, dropout is often multi-factorial and academic difficulty may be an effect rather than a cause, particularly in students with ill-health.

Psychological morbidity

Numerous studies identify associations between medical student struggling (and dropout) and mental health problems.[1-3] The stresses of medical school are well recognized – high work-load, vast curriculum, competitive environment and exposure to difficult situations.[5] Medical students experience higher levels of anxiety than the general population.[6] The UCC study found a higher rate (40%) of psychological and psychiatric illness than other studies.[3] Problems included depression, anxiety, stress, eating disorders and addictions.

Social Isolation

Similar to other studies, social isolation was identified in 20% of students who dropped out at UCC.[3] Overseas students and first-year students were at particular risk. Interestingly, there was higher dropout in students from Kuwait, but not Malaysia (this country-specific effect has not been previously demonstrated).[3] This may be related to the high number of Malaysian students studying medicine in Ireland (good peer support). Social isolation was frequently associated with other factors such as academic difficulty and psychological problems.[4]

Unprofessional behaviour

Unprofessional behaviour has been linked to underperformance. There is evidence that unprofessional behaviour as a student (failing to respond to faculty emails, adversarial or aggressive attitude, history of police contact) may be associated with deficiencies in later professional life.[7]

Identifying the at risk student

Factors associated with dropout can be used as 'red flags' to help identify students at risk, prompting early intervention and remediation. Similar to other studies,[1,2] the UCC study[3] found the highest rate of dropout in first-year students. First-years may be lonely and homesick and find it difficult to adapt to the heavy workload and self-directed learning of third level education. Other important risk factors include physical illness, psychological illness, and social isolation. Absenteeism was identified in 30% students who dropped out, suggesting that attendances should be closely monitored.[3] Non-white ethnicity has been found to be a risk factor for struggling,[2] but not dropout.[1-3] Similarly, male gender is associated with struggling but not dropout.[1-3] Age has not been shown to be associated with struggling or dropout.[1]

Strategies to help the at-risk student

Coping with Stress

Resilience and the ability to manage stress are important for medical professionals. In UCC, all students are given the SAFEMED programme.[8] SAFEMED is an evidence-based, cognitive behavioural programme aimed at enhancing well-being and promoting life skills, resilience and protective factors in medical students and doctors. Shapiro et al found that stress reduction interventions decreased anxiety and increased positive coping skills of medical students.[9] A self-development group intervention study involving third-year medical students showed a reduction in student stress levels.[10] Evidence suggests that certain personality traits can predict vulnerability to stress in medical training.[11]

Mentoring and Student Welfare

Student pastoral and support services are well-developed in medical schools. In UCC, for example, there is a peer-support system, a formal mentoring service (each student assigned a faculty mentor), and a formal Student Welfare Service led by experienced faculty where students self-refer ('open-door' policy) or are referred by academic staff. The Student Welfare Service can refer students onwards to other services and supports as needed. However, similar to other studies, the UCC study found a low rate of engagement with these services (under 30%) in students who dropped out.[4] Thus, students most in need of these services did not access them. Reluctance to seek help has been attributed to concerns about confidentiality.[12] Studies have shown that medical students are reluctant to disclose a mental illness because of stigma and the perception that experiencing a mental health problem may be viewed as a form of weakness with implications for subsequent career progression.[12] In addition, students who lack insight may not seek help. The new Medical Council 'Fitness to Practice' regulations may contribute to student concerns. The University of Calgary in Canada uses remediation mentors who are not involved in student teaching and assessment and not in a position of authority.[13] Ideally, mentors identify the problem that led to a student's difficulty, propose a process of remediation and supervise this process. Individual support programs can be tailored for students with communication, language and inter-professional difficulties. Studies have been

CPD available online at www.imj.ie and questions on page 303.

shown that both individually tailored programmes and group remediation using skilled facilitators have led to improved performance and a fall in attrition rate.[14]

Academic Support
Early academic problems may reflect students' difficulty in adapting to the independent learning of a university environment and some students may benefit from targeted support including study skills advice and language support. Educational intervention programmes have been shown to improve academic performance.[15] Intensive remediation, although time-consuming, is preferable to continued failure and ultimate dropout.[13]

Recommendations

It is important that student welfare services are actively promoted, especially to first years and overseas students. Students should be encouraged to seek help earlier rather than later and to submit extenuating circumstances forms. Medical schools need to promote a culture of seeking help early. Students need to be reassured about confidentiality and non-disclosure of sensitive information. Peer-mentoring is particularly valuable in identifying and supporting students at risk of social isolation. Absenteeism is an important early 'red flag' and absences from lectures and clinical sites warrants meeting with the student to identify underlying problems. Study skills tuition and language support services should be widely available to first year students including group remediation and tailored individual support for specific problems with language, communication and inter-professional skills. Students who fail have been found to have significantly lower scores in formative assessments than their peers.[15] Weak students often continue to have difficulty if they don't receive feedback.[15] Key to successful remediation is the identification of reasons for poor performance and for students themselves to be able to recognize their areas of difficulty. Principal stressors in medical school include uncertainty about study behaviour, progress and aptitude, with specific concerns about assessment and the availability of learning materials.[5] A well-designed curriculum and assessment methods could help address these concerns.

Stress preventative tools such as SAFEMED should be provided early in undergraduate training. Personal and interpersonal skills including coping skills, negotiation, conflict resolution, dealing with death and dying, assertiveness, time management and team-working are all valuable skills in medicine and should form part of the continuum of medical education. Strategies need to be in place to deal with unprofessional behaviour including 'Concerns' forms to report unsatisfactory behaviour. There will always be students who leave medicine. However, there are students who may have been able to continue if they had been given the right support at the right time and by the right people. Medical schools have a duty of care to monitor attrition rates and identify 'at risk' students and offer timely remediation in a structured, sympathetic and confidential manner. This may involve study skills advice, time out for recovery after illness, or even gently steering a student towards a more appropriate career. Dropping out of medical school can be very traumatic and students who leave need support and guidance on alternate career paths.

Early identification of the 'at risk' student can help identify students at risk of underperformance and dropout, triggering early remediation and the possibility of remaining on the medical programme.

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Neonatal Referrals to the Coroner Service: A Short Survey on Current Practice

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Abstract
In Ireland, Coroners are required by law to ascertain the details of potentially unexplained deaths. The Coroner's Acts (1962 and 2005) detail deaths which must be notified to the Coroner.[1] We surveyed current practice regarding the notification of the Coroner Service following neonatal deaths by telephone interview of senior Clinical Nurse Managers of paediatric units with neonatal inpatients. Five of 21 units (23.8%) reported that all neonatal deaths would prompt contact with the Coroner Service, with four more units (19%) reporting that unexpected neonatal deaths would be referred. Nine units (42.9%) reported that referral was at the discretion of the consultant involved while three units (14.3%) do not refer neonatal deaths to the Coroner.

Introduction

In Ireland, Coroners are legally required to investigate sudden, unexplained and unnatural deaths. In adults, the deaths which must be referred to the Coroner are well-defined by The Coroner's Acts (1962 and 2005)[1,2] but the guidelines regarding neonatal death in the legislation are less clear. While the Act stipulates that certain stillbirths and sudden infant death should prompt a referral to the Coroner, no specific reference is made to neonatal deaths who have all, by definition, been seen by a medical practitioner within one month of death.[1,2,4,5] While the subsequent Coroner's Bill (2007)[3] details further deaths that would be reportable to the coroner, this, as yet, has not been enacted into law. In Ireland, there are 45 coronial districts, where each coroner is appointed by the local authority. A coroner (or deputy coroner) must be legally or medically qualified, with at least five years' experience in their respective profession. Additionally, the Local Appointments Commissioners shall, before recommending a person for appointment to the office of coroner, satisfy themselves that the person possesses the requisite knowledge and ability for the proper discharge of the duties of that office. Each year in Ireland 150 neonates die in the first week of life.[6] While many of these deaths are "natural", neonatal deaths are often unexplained. Given the complexity of the issues arising from neonatal death and the impact on families, it is crucially important that medical practitioners interact with the Coroner in a standard fashion. We aimed to establish whether this was the case.

Methods

In November 2011, the most senior Clinical Nurse Managers in 21 paediatric units nationwide were contacted by telephone and asked the question "Following a neonatal death, under what circumstances would you contact the Coroner?" A telephone interview then followed, with all data recorded by the interviewer. Specifically, the CNMs contacted were asked about expected versus unexpected deaths, trauma and suspected congenital anomalies.

Results

Five hospitals reported that they currently notify the Coroner following all neonatal deaths. Four additional hospitals currently report unexpected deaths only; all specifically do not contact the Coroner following deaths thought to be due to previously identified congenital anomalies. Three hospitals reported that they do not contact the Coroner following neonatal deaths. The remaining nine units reported that they have no formal protocol or guidelines, and that referral is entirely at the discretion of the consultant involved. All commented that they had rarely experienced neonatal deaths and so had little experience in this area.

Table 1 Practices of hospitals in Ireland regarding referral to the Coroner Service following neonatal deaths

Referral practice	No. of Hospitals
Report all neonatal deaths to the Coroner Service	5
Report all unexpected neonatal deaths to the Coroner Service	4
No guidelines regarding referral to the Coroner Service	9
Do not report neonatal deaths to the Coroner Service	3
	21

Discussion

This survey suggests that there is considerable unit to unit variability in reporting neonatal deaths to the Coroner Service. This phenomenon is not unique to Ireland and has been described previously in medical literature.[7] It may result from a lack of clarity as to which cases need to be reported and which do not. While many clinicians may feel that they are happy to provide a medical certificate as to cause of death, before they do this, they must be satisfied that the deceased did not die "either directly or indirectly, as a result of violence or misadventure or by unfair means, or as a result of negligence or misconduct or malpractice on the part of others, or from any cause other than natural illness or disease for which he had been seen and treated by a registered medical practitioner within one month before his death, or in such circumstances as may require investigation (including death as the result of the administration of an anaesthetic)."[2] If a medical practitioner is unable to certify a cause of death (i.e. cause of death is unknown) that practitioner must inform the Coroner Service.

It must be noted that discussing a case with the coroner does not commit the coroner to directing that either a post-mortem need be performed, or that an inquest need take place. Under The Coroner's Acts, the Coroner is obliged to hold an inquest only in relation to the death of that person if he is of opinion that the death may have occurred in a violent or unnatural manner, or suddenly and from unknown causes (after post-mortem examination) or in a place or in circumstances which, under provisions in that behalf contained in any other enactment, require that an inquest should be held. Most neonatal deaths do not come under this category; if the Coroner is contacted it is likely that in the majority of cases the treating physician will be directed to sign the medical certificate as to cause of death. The policy of informing the Coroner Service gives the Coroner the opportunity to consider the circumstances of a specific neonatal death and any issues which may arise from it. This is important as, for many neonatal deaths, relatives do not request or consent to post-mortem examination. It can be difficult for individual clinicians to be certain as to which cases are of interest to the Coroner Service and which are not; one point of view is that a safe solution would be to refer all neonatal deaths and allow the Coroner the opportunity to proceed or not. On the basis of our survey, it is unclear whether standard protocols exist in many paediatric units regarding referral of neonatal deaths to the Coroner Service. If written protocols exist, our study suggests that there may not be universal awareness of these among frontline staff.

As an aside, it is worth noting that the neonatal post-mortem examination remains the gold standard in determining the cause of neonatal deaths.[8] It is a source of valuable information for families and can promote improvement of clinical practice in neonatal units. Recent research from other tertiary referral

centres has underlined the fact that even in an environment where neonatal post-mortem examinations are declining in frequency, they often uncover clinical conditions or diagnoses other than the previously-identified cause ofdeath.[9,10] As a result of the information obtained about inheritable conditions, valuable information may be passed on to families regarding screening and risk of recurrence in future pregnancies.

While uniform referral practices across all paediatric units may require specific guidance from interested professional bodies, staff in many paediatric units currently appear to be unaware of protocols in place for reporting deaths to the coroner. In the absence of specific guidance from professional bodies or from the Coroner Service itself, we would suggest that many more neonatal deaths may require discussion with the Coroner. Additional work is required to further examine the issues surrounding referral to the Coroner Service in Ireland so that the response to and investigation of neonatal deaths can be standardised across the country.

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Fracture of the Scapular Neck Sustained in an Arm Wrestling Match

Sir

Abstract
The sport of arm wrestling requires very little equipment, and can take place anywhere a flat surface is available. As such, undertrained participants often compete, with inevitable injury. Humeral fractures, and elbow injuries are well described[1,2], but scapular fractures have not previously been reported in the literature.

Case Report

A 30 year-old male presented to ED complaining of right shoulder pain. He had been arm wrestling three days previously when he felt 3 clicks and acute pain in the right shoulder and scapular region. At that instant, his forearm was displaced laterally as he attempted to resist the attacking movement. On examination he was tender over the right scapula with globally decreased range of movement in the right shoulder, particularly abduction. Sensation was decreased in the distribution of the right ulnar nerve. Plain radiographs of the shoulder revealed an extra-articular fracture of the neck of the right scapula. Computerised Tomography demonstrated the fracture extending through the infraspinous segment of the scapula with anteromedial displacement of the glenoid and coracoid process and overlap of the fracture fragments. The injury was managed conservatively with four weeks immobilisation in a sling, followed by progressive range of motion excercises. At six months follow-up the fracture has healed in acceptable position with 20 degrees loss of external rotation but full abduction, forward flexion and internal rotation and complete resolution of ulnar nerve symptoms.

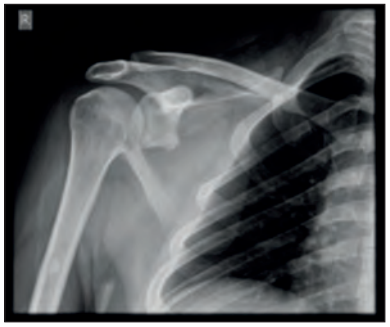

Figure 1
Antero-posterior plain radiograph of the shoulder showing fracture at time of diagnosis.

Discussion

Arm wrestling involves forced rotation of the shoulder joint against resistance, with the elbow joint in a position of approximately 70 - 90 degrees of flexion. If winning the bout, internal rotation is the dominant movement, while in defeat, forced external rotation occurs. The force is transmitted through the wrist joint, while the elbow joint acts as a fulcrum about which the humerus rotates. This allows the forces involved to be calculated as follows: Torque = Force x length of lever. If a force of 20kg (approximately 200N) is exerted on the hand, and the forearm is 40cm long, 80Nm of twisting force is applied to the humerus. Biomechanical studies and simulations have shown this force to act maximally 11.5 cm proximal to the elbow joint on the medial-posterior side of the humerus[3] and calculated that only 50-71Nm is required to initiate humeral fracture[4]. Given these intense forces it is unsurprising that injuries are often encountered in arm wrestling, most commonly spiral fractures of the humerus and avulsion fractures of the medial epicondyle[1,2]. The mechanism of humeral fracture is postulated to involve a sudden change from concentric contraction to compensatory eccentric contraction of the shoulder

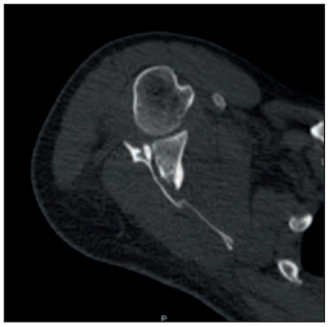

Figure 2
Axial CT Scan image through shoulder demonstrating fracture pattern.

internal rotators in the defensive position[2]. We propose a similar mechanism of injury in this case, with eccentric contraction of shoulder internal rotators placing extreme forces on their scapular attachment sites.

As the fracture in this patient was extra-articular with acceptable displacement, conservative management was felt to be appropriate. However, intra-articular injuries or fractures with significant displacement may require fixation, the exact construct dependant upon the fracture pattern.

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RE: Towards Realistic and Flexible Advance Care Planning

Sir,

We refer to IMJ Editorial entitled 'Towards Realistic and Flexible Advance Care Planning[1]. We appreciate the focus on this issue which is agreed to be of importance internationally[2]. We agree with the author that 'Think Ahead'[3] is indeed 'the most prominent advanced care directive currently available in Ireland.' We disagree with most other opinions expressed.

'Think Ahead' is more than an advance care directive. It is this, but also a comprehensive end of life planning tool, facilitating the individual to engage with their family, friends and professionals to make and record a broad number of preferences regarding end of life. It particularly addresses issues known to be of concern to the Irish Public[4]. It is a citizen-led tool, developed from a prolonged process of engagement with the public, patients, and medical and legal professions. Its development has been informed with reference to the international peer reviewed literature, and by pragmatic studies conducted in the community setting, evaluating feasibility and acceptability to patients and to health care professionals.

We believe that it is unhelpful for Prof. O' Neill to draw comparisons between the property bubble in Ireland from 2006 and end of life planning. We do not understand how he plausibly associates end of life planning with '....negativity about life with dementia and disability,' which appears to be the impression created by his editorial. Think Ahead is aimed at the entire population and is empowering to the individual, who can revoke or revise their advance care directive at any time - in writing or verbally. Those of us working in the community do appreciate constructive criticism, which leads to improved care for patients. We understand most clinical tools in use are imperfect to some extent. Prof O Neill is, however, clear in his rejection of all such tools, which he expansively dismisses as 'most forms of advance care directives.' We believe what he proposes instead appears vague and impractical. He advises Irish Clinicians to 'inject clinical reality' into the debate, concluding with a reference to 'a full palette of care at the end of life.'

We believe that this point of the patient journey in Ireland is often experienced in the out of hours setting by older, suffering public patients, supported by Nursing Home staff and on call General Practitioners who may not have personal knowledge of the patient. The individuals concerned, and Nurses and Doctors responsible for their care, would benefit from clear information reflective of the expressed wishes of the patient. At the risk of appearing fanciful ourselves, Prof O' Neill's editorial does rather appear a classic example of what Volatire neatly expressed as 'the great being the enemy of the good.' We are all ethically obligated to collaborate in the interest of patients for whom we have a duty of care.

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Author Response

Sir

One of the key challenges of medicine is to assist our patients in the management of uncertainty[1]. This extends to the uncertainties of future care planning. A large literature exists on how much people change their minds after making legally-binding future plans: not only in medicine[2], but also in other areas of life, such as marriage and financial investments. In these latter cases, those affected can mount a challenge to the original plan, unlike the situation with advance care directives at the point where capacity no longer exists.

It is not clear from the correspondence of O'Shea *et al* as to their grounds for viewing as 'unhelpful' the analogy of legally-binding advance directives with injudicious financial investments during the Celtic Tiger era[3], or why the principles outlined in the editorial are 'vague, impractical and aspirational'. In a field increasingly rich in empirical evidence and informed commentary, opinion is not sufficient in itself and the authors need to provide evidence or coherent reasons to support these statements, particularly given the fact that the Royal College of Physicians in Ireland and the

Irish Medical Organisation have incorporated much of the principles outlined in the editorial in their recent position statements on advance care planning[4,5].

A factor in the persistence of promotion of legally-binding advance directives in some quarters may be an uncritical reliance on the reports from both the Irish Council of Bioethics and the Law Reform Commission on advance directives[6,7]. However, neither of these clearly outlined their literature search strategy, and there is a striking absence in both of the literature casting doubt on the wisdom and practicality of legally-binding advance directives. This is also an area where we can also learn much from the humanities. At the heart of the great plays of Molière is the folly of humans trying to artificially maintain an ideal state that does not take account of future reality, whether through storing up spiritual credits (*Tartuffe*), money (*The Miser*) or medical advice (*Le Malade Imaginaire*). This debate could do with an infusion of Molière's joyous sense of human finitude, as well insisting on due scrutiny of the evidence base and extensive ethical literature of advanced care planning.

Equally, in Voltaire's *La Bégueule*, although the wise Italian narrator states that the best is the enemy of the good for expectations in personal relationships, he also states that we should strive wisely for the best in goodness, ability and science: in effect, supporting the ethical imperative for favouring sophistication and science over undue simplification with complex bioethical concepts.

The incorporation of advance-care planning in both the ethical guidelines of the Medical Council[8] and HSE guidelines on consent[9] should reassure O'Shea and colleagues that advance care planning is already available to support nursing home staff and general practitioners who review vulnerable patients at night without recourse to unhelpful legally-binding documents. These developments are supported in their administration by guidance available both in written form4 and through online courses in advance planning[10].

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Vaccination Against Influenza Amongst Healthcare Workers

Sir,

I wish to comment in a personal capacity on the report of seasonal vaccine uptake for the 2011/2012 influenza season, specifically amongst healthcare workers (HCWs) in acute hospitals, as reported recently[1] and subsequently on the HSE website for the 2012/2013 season (www.hpsc.ie/hpsc/AZ/Respiratory/Influenza/SeasonalInfluenza/Vaccination/#d.en.14341).

Despite the best efforts of occupational and public health departments, infection prevention and control teams and others, the vaccination rates for HCWs were very low at approximately 20%.[1] Preventing healthcare-acquired influenza requires a number of interventions including early diagnosis, appropriate infection prevention and control precautions with isolation or cohorting of symptomatic patients, antiviral prophylaxis where indicated, and the vaccination of at-risk patients. Healthcare worker vaccination breaks the chain of infection and also protects the healthcare worker. A recent retrospective review in an Italian hospital of influenza over seven years found an association between declining influenza vaccination coverage amongst HCWs and increased nosocomial influenza-like illness (ILI) in hospitalised patients.[2] While ILI does not always equate to influenza, this confirms previous reports that HCW vaccination helps reduce healthcare-acquired influenza.

There are three potential approaches to HCW vaccination: voluntary vaccination, where the HCW is encouraged to be vaccinated but not compelled in any way to do so, declination, where the HCW either receives the vaccine or declines but has to sign an acknowledgement of the potential implications for patients and other HCWs in not receiving the vaccine, and finally mandatory vaccination, which is a condition of employment. In a study of 124 hospitals in Louisiana, USA in 2012, two thirds had programmes that required a signed declination form and in these hospitals, the median vaccination rate was significantly higher compared with those where there was a policy of voluntary vaccination (72% vs 50% $p < 0.001$).[3] The authors also noted that hospitals who were accredited had better vaccination rates, emphasising the importance of regulatory agencies in dictating practices.

The arguments for and against mandatory influenza vaccination of HCWs have recently being outlined and those against the mandatory approach include doubts about proven efficacy, the fact that some ILI is not due to influenza, the potential risks of vaccination and the ethical rights of staff.[4] However, HCWs and health services have an ethical and professional obligation to protect patients in acute hospitals and elsewhere, and to minimise preventable infections through vaccination, when there is a safe one available. It is clear that in Irish acute hospitals, the policy of voluntary vaccination has failed with a mere one in five being vaccinated. Recent outbreaks of healthcare-acquired influenza in acute hospitals, while multi-factorial in origin, have been due in part to the low rate of HCW vaccination.

The time has now come for a more assertive approach to protecting patients where the HCW either agrees to receive the vaccine or signs a declaration indicating that he/she understands the potential consequences of not being vaccinated. This would significantly increase the vaccination rate while respecting the ethical rights of the HCW. Higher influenza vaccination rates amongst HCWs will protect patients, HCWs, and their contacts, including family members.

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Author Response

Sir,

We support Professor Humphreys' call for a more proactive approach to influenza vaccination amongst healthcare workers (HCWs). We acknowledge that having institutional policies that require staff to sign declination forms (for non-vaccination) has been shown to increase uptake. Declination forms must be part of an adequately resourced, leadership driven, committed vaccination programme[1-3]. Implementing a mandatory declination form policy has its own challenges, requiring substantial additional resources to track compliance, monitor declination rates and implement actions for non-compliance, and may negatively impact on employer-employee relationship and create animosity in the workplace.[4] Voluntary HCW vaccination programmes can achieve high uptake and are reported in other countries.[5,6]

Therefore, we believe that a first step towards normalising influenza vaccination among HCWs as an infection control requirement and professional duty, would be to implement the following as part of an incremental strategy to improve uptake: Mandatory education and training for HCWs on influenza, prevention and control (including voluntary vaccination) as part of infection control and health and safety training. Mandatory training for HCWs already exists e.g. CPR (Cardiopulmonary resuscitation), Hand Hygiene, Manual handling, and systems are well established for HCWs to avail of training (face-to-face or as part of e-learning requirements). Easy access to ward (or other workplace site) vaccination. Line mangers should be required to know the vaccination status of their HCWs, and HCWs should be required to inform their line manager of their vaccination status.

Such a requirement would be supported under health and safety legislation (Safety, Health and Welfare at Work Act 2005[7] whereby employers and employees are required to manage health and safety in the workplace. Under this act employees are required "*to ensure that they take reasonable care to protect their own safety, health and welfare and that of any other person who may be affected by their acts or omissions.*" [7] Furthermore, employees are required to co-operate with the employer to ensure safety, health and welfare at work.[8,9] Under the recently published (February 2014) Code of Practice for the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013)[10] it specifies that "*vaccination should be carried out in accordance with the recommended immunisation guidelines for Ireland issued by the National Immunisation Advisory Committee (NIAC) of the Royal College of Physicians of Ireland (RCPI)*" and "*Employees should be informed of the benefits and drawbacks of both vaccination and non-vaccination.*"[10]

In addition, we encourage Professional Bodies (e.g. RCPI/RCSI, An Bord Altranais, Associations of other professional groups) and Trade Unions in Ireland to support this initiative and acknowledge that all HCWs have a responsibility to prevent the spread of seasonal influenza as they have long been advocates for the rights of staff and patients.

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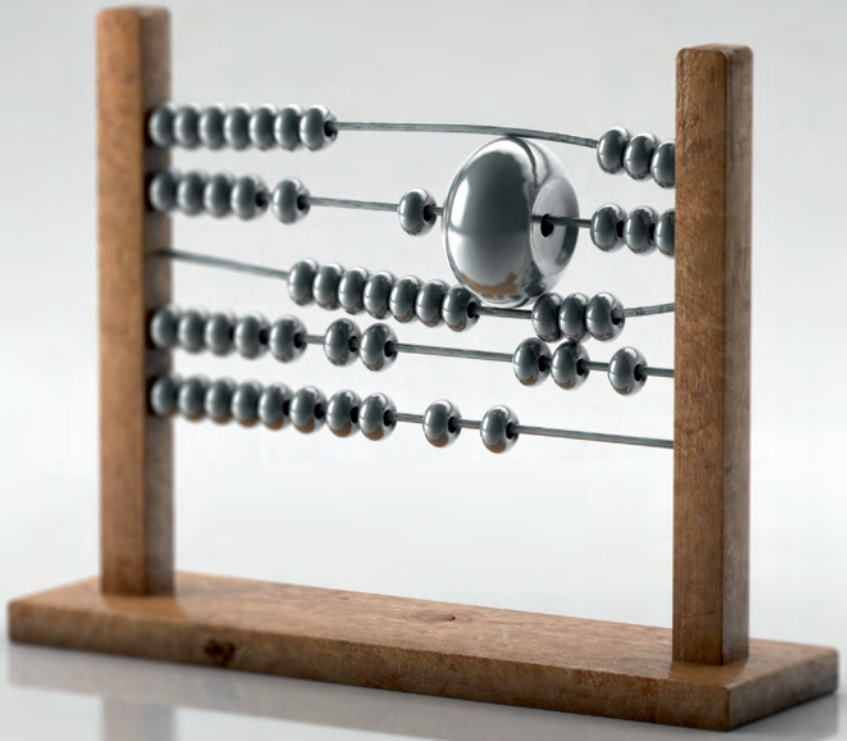
BIG EXPENDITURE DOESN'T HAVE TO MEAN BIG DISRUPTION.



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D Kerrigan, P Waters, M Ryan, M Irfan, J Hanaghan, W Khan, MJ Kerin, K Barry. Ir Med J. 2014; 107: 273-5.

Question 1
The number of breast cancer survivors in the study was

a) 81
b) 91
c) 101
d) 111
e) 121

Question 2
The number of GPs in the study was

a) 61
b) 71
c) 81
d) 91
e) 101

Question 3
The proportion of GPs in favour of community follow-up was

a) 51%
b) 53%
c) 55%
d) 57%
e) 59%

Question 4
The patients' confidence in GP follow-up was

a) 62%
b) 65%
c) 67%
d) 71%
e) 73%

Question 5
The diagnosis and treatment of breast cancer in Ireland was centralized in

a) 2007
b) 2008
c) 2009
d) 2010
e) 2011

An Analysis of the Recording of Tobacco Use among Inpatients in Irish Hospitals

A Sheridan, F Howell. Ir Med J. 2014; 107: 275-8.

Question 1
The prevalence of cigarette smoking in Ireland is

a) 21.7%
b) 23.7%
c) 25.7%
d) 27.7%
e) 29.7%

Question 2
The annual number of hospital discharges attributable to smoking is

a) 35,000
b) 36,000
c) 37,000
d) 38,000
e) 39,000

Question 3
The proportion of all inpatient discharges with tobacco use details was

a) 21.6%
b) 22.6%
c) 23.6%
d) 24.6%
e) 25.6%

Question 4
SLAN in 2007 reported that the proportion of adults who were current or former smokers were

a) 40%
b) 42%
c) 44%
d) 46%
e) 48%

Question 5
It is estimated that the proportion of trachea, lung and bronchus cancers that are smoking related is

a) 84%
b) 85%
c) 86%
d) 87%
e) 88%

The At-risk Medical Student – What More Can We Do?

B Maher, H Hynes, C Sweeney, A Khashan, K Doran, M O'Rourke, AM Harris, S O'Flynn. Ir Med J. 2014; 107: 295-6.

Question 1
The medical student attrition rate at UCC was

a) 3.7%
b) 4.7%
c) 5.7%
d) 6.7%
e) 7.7%

Question 2
Among those who dropped out academic difficulties were reported in

a) 45%
b) 50%
c) 55%
d) 60%
e) 65%

Question 3
Among those who dropped out psychological problems were reported in

a) 34%
b) 36%
c) 38%
d) 40%
e) 42%

Question 4
Among those who dropped out social isolation was reported in

a) 12%
b) 14%
c) 16%
d) 18%
e) 20%

Question 5
The highest drop-out rate was in

a) 1st year
b) 2nd year
c) 3rd year
d) 4th year
e) 5th year

KEY DATES FOR 2013 TAX RETURNS

Pay + File Deadline: 31st of October 2014
Online Deadline: 13th of November 2014

Those who wish to save for retirement in the most tax-efficient way should consider making a pension contribution prior to the deadline.

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