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IMJ Commentary

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Erratum

In the article
"Strategies to Address Poor Influenza Vaccine Compliance in Healthcare Workers"
(Ir Med J. 2015;108:157),
the author listing should have been
C Sadlier, A Carr, S Kelly, C Bergin

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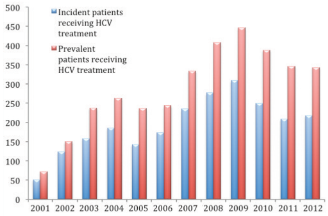
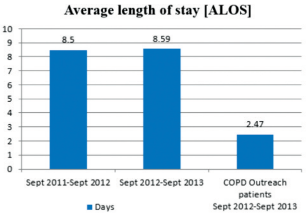
In this Month's IMJ



The budget impact of Hepatitis C treatment in Ireland 2001-2012: Kieran et al state that in the period 2000-2012, 2030 patients received anti-viral treatment for Hepatitis C. The total treatment cost was €25.5 million. The therapies were pegylated interferon and ribavirin. Haematological Growth Factor was used to treat the adverse effects of the therapy. It is estimated that into the future, new agents will cost more but will have less side-effects.



The efficacy of COPD outreach in reducing length of stay and improving quality of life: Sahadevan et al have demonstrated the value of a COPD outreach programme. Following its introduction, the average length of hospital stay fell from 8.59 to 2.47 days. Readmission rates within 90 days among COPD outreach patients were 36.3%.

The silver surfer: trends of internet usage in the over 65 and the potential health benefits: Edwards et al report that internet use in over 65s has increased from 8.3% to 24.1% between 2002 and 2012. Factors associated with higher internet use were better education, living with a partner, male, and urban dweller. Those with subjective good health had a 21% access compared with 7.1% with poor health. The Irish usage rates are lower than the UK and other EU countries.

Table 2 Percentage with internet access over 65 between 2002 and 2010 across Europe. Only including countries which provided data for all 5 rounds

	Round 1 (2002)	Round 2 (2004)	Round 3 (2006)	Round 4 (2008)	Round 5 (2010)	Total
Ireland	8.3	9.8	16.4	23.9	24.1	16.7
Netherlands	20.6	27.2	33.8	47.3	57.0	37.2
Denmark	16.1	25.8	31.6	45.0	55.0	36.5
Sweden	16.2	22.5	30.0	37.9	53.0	32.1
Norway	9.9	22.3	25.5	47.8	50.8	31.0
Switzerland	11.7	18.1	26.1	30.9	37.7	24.3
United Kingdom	13.1	12.7	23.5	29.4	35.6	23.8
Finland	8.7	13.2	18.7	24.5	30.4	19.2
Belgium	7.0	8.6	12.7	19.8	31.4	15.9
Portugal	17.7	2.1	3.5	6.3	7.5	6.6
Slovenia	2.3	2.4	6.9	8.8	8.4	5.8
Hungary	0.3	4.3	4.4	8.3	9.8	5.5
Spain	1.7	2.5	2.9	3.2	14.9	4.9
Poland	1.2	0.8	2.1	5.8	8.1	3.6

An observational research study to evaluate the impact of breakthrough cancer pain on the daily lives and functional status of patients: Twomey et al provide a detailed insight into the impact of breakthrough cancer pain (BTcP) on patients' quality of life. Among 81 patients, BTcP occurred twice daily in 30% and 3-4 times daily in 70% of patients. The duration of the pain ranged from <15 minutes to > 60 minutes. The authors urge that assessment of BTcP should be undertaken for all oncology patients.

Table 2 Duration of breakthrough cancer pain episodes. n=81

Duration	Female	Male	All
< 15 minutes	6 (14.3)	13 (33.3)	19 (23.5)
15 – 30 minutes	13 (30.9)	12 (30.8)	25 (30.9)
30 – 60 minutes	12 (28.6)	6 (15.4)	18 (22.2)
> 60 minutes	11 (26.2)	8 (20.5)	19 (23.4)
All	42 (100.0)	39 (100.0)	81 (100.0)

A series of oral lesions presenting to an otolaryngology department: Khan et al describe the pattern of oral lesions presenting to an ENT department. Among 106 cases, 88.7% were benign and 11.3% were malignant. Among the 12 malignant lesions, 8 were on the lateral border of the tongue, 2 on the buccal mucosa, 1 on the floor of the mouth, and 1 on the lower lip. Fifty per cent of the patients with an oral cancer smoked more than 20 cigarettes per day.

Table 3 Malignant lesions (12/106)

	No	Incidence
Age		
Above 40 years	12	
Below 40 years	00	
Sex		
Male	06	
Female	06	
Referral		
G.P	10	
A&E	02	
Smoking		
10-20 cig / day	06	
non smoker	05	
not known	01	
Site		
Tongue lateral border	08	7.5%
Cheek mucosa	02	
Floor of mouth	01	
Lower lip	01	
Histology		
Carcinoma in situ	01	
Well differentiated	03	
Moderately differentiated	06	5.6%
Poorly differentiated	02	

Maternal obesity and neck circumference: Anglim et al point out that obstetric anaesthesia is more difficult in women who are overweight. Neck circumference is a predictor of intubation difficulties. In this study the mean neck circumference in obese women was 38.2 cms compared with 33.0cms in normal BMI women at 36-40 weeks gestation.

Table 1 Mean maternal neck circumference analysed by BMI category

BMI category	NC at 18-22 weeks (cm)	NC at 36- 40 weeks (cm)	Change in NC (cm)
Normal	31.5	33.0	1.6
Overweight	33.7	34.8	1.1
Obese	36.8	38.2	1.5
Total	34.0	35.4	1.4

A review of potentially inappropriate prescribing in over 65s in livinghealth clinic: Potentially inappropriate prescribing (PIP) in the over 65s is associated with increased levels of morbidity and mortality. The national figure for PIP is between 21.4% and 35%. In their study the authors found that one of the top 4 PIP breaches was aspirin prescribing without a history of coronary or arterial disease.

Table 1 PIP using the STOPP criteria audit findings

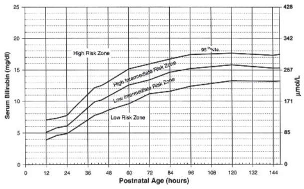
	BASELINE AUDIT August 2013	REVIEW AUDIT August 2014	POST-STOPP November 2014
Total study sample	56	118	118
No. of Patients ID	9 (16%)	33 (28%)	34 (29%)
Breach incidences	N/A	42	43

The Bhutani nomogram reduces incidence of severe hyperbilirubinaemia in term and near term infants: O'Reilly et al describe the use of the Bhutani nomogram in the prevention of high bilirubin levels. The nomogram stratifies the risk for the later development of hyperbilirubinaemia.

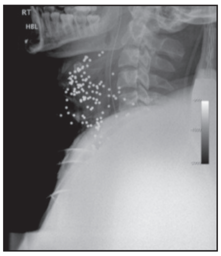
Table 1 Comparison of patient numbers and TSB values

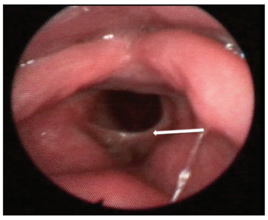
Years	2007 & 2008	2012
Infants >36weeks and 2.5kg	15,851	8288
Infants with at least 1 TSB performed	1645 (10.4%)	1001 (12.1%)
Max TSB (mol/L)	673	349
Mean TSB (mol/L) p<0.001	209	173
Mean time of first TSB (Hours) p<0.001	65.4	57.1
Near (within 50 mol/L) Exchange Transfusion Level p=0.11	16 (0.97 %)	4 (0.4%)
Number with TSB Above Exchange Transfusion p=0.002	14 (0.85 %)	0

Abb: TSB: total serum bilirubin.



Acquired anterior laryngeal web in a shotgun injury: Lennon et al describe a 27 year old man who developed an anterior laryngeal web following a shotgun neck injury. The lateral x-ray of the neck demonstrates the distribution of the shot.





Medical record documentation among interns: a prospective quality improvement study: Owen et al found that interns' record keeping was sub-optimal. Less than half noted the patient's name, background history or their impression of the case. Following a teaching session on documentation requirements, there was a significant improvement in note keeping.

Table 1 Intern Compliance with Documentation Guidelines before and after Education

Variable	Before	After	P-Value
Name	45 %	81 %	<0.0001
MRN	31 %	75 %	<0.0001
Date	98 %	95 %	0.4448
Time	54 %	80 %	<0.0001
Signature	90 %	95 %	0.2828
Dr. Name	62 %	91 %	<0.0001
Dr. Title	88 %	85 %	0.6796
Bleep	85 %	92 %	0.1827
MCRN	76 %	92 %	0.0033
Black Ink	99 %	96 %	0.3687
Reason	98 %	100 %	0.4975
Case Review	46 %	78 %	0.0001
Impression	47 %	62 %	0.0465
Plan	98 %	98 %	1.0000
Info Given	1 %	18 %	0.0001

Attitudes of hospital healthcare workers towards influenza vaccination in a tertiary hospital setting: Muhammad et al outline why healthcare workers don't avail of the 'flu vaccine. The national healthcare worker vaccination rate is 20%. The reasons given in this study include concerns about side-effects, and lack of awareness that the vaccine covered both seasonal and H1N1 flu strains.

Table 1 Common reasons cited by HCWs for not receiving the vaccine and why vaccinations were finally obtained; 'convinced' against 'unconvinced' groups

Why did you not receive the influenza vaccination during our annual influenza campaign in October-November 2010?	Number of responses
I planned to but did not get the time to attend	59 (49.6%)
I missed the mobile cart when it was brought to my department	47 (40.0%)
I was concerned about getting side-effects	28 (23.5%)
I had side-effects from previous vaccinations	17 (14.3%)
I was not aware the current vaccine covered both the seasonal and H1N1 (swine) flu strain	14 (11.8%)

What was the reason for you finally getting vaccinated?	'convinced' group	'unconvinced' group	Total response	Z-score*
I believe influenza is a serious illness	27 (22.7%)	59 (49.6%)	86 (72.3%)	3.72 (P=0.0001)
I wanted to protect my family/friends from the flu	27 (22.7%)	57 (47.9%)	84 (70.6%)	3.52 (P=0.0002)
The recent increase in H1N1 flu infections as heard in the media	24 (20.2%)	53 (44.5%)	77 (64.7%)	3.56 (P=0.0002)
I believe in the effectiveness of the vaccine	20 (16.8%)	55 (46.2%)	75 (63.1%)	4.57 (P<0.00001)
I wanted to protect the patients from the flu	20 (16.8%)	44 (37.0%)	64 (53.8%)	3.24 (P=0.0006)

Measuring Healthcare in Developed Countries

Medicine in first world societies is reaching a crossroad. There is an increasing acceptance that ever more resources cannot be expended on healthcare without robust accounting of what society and its citizens is getting in return. The big issues for health services are financial reform, better access, improved information for patients, better primary care prevention, and a stronger focus on accountability. This concept of practical evaluation is a simple one but its execution is both complex and difficult. No health service has succeeded in getting it right to date. The major challenge is finding reliable measures that accurately represent what quality medicine should be achieving. The lack of standardization in methodology and approach often prevent broader comparisons. The widespread application of a limited number of measures would align the incentives and actions of multiple organisations.

Quality measurement is an immature science. It is agreed that core measures are the basis to assessing the overall health of a nation. It allows comparisons to be made between hospitals, health care services, and countries. Until recently it has had to rely on expert opinion in the absence of hard data. There is currently a frenetic 'catch-up' process in operation. Measures are being produced at a rapid pace. Some of the metrics are imprecise and of poor quality. Practicing physicians are frequently confused by the directives that they are asked to follow. They feel that there is a lack of connectivity between what they do and how it is assessed. There is insufficient understanding of the fact that metrics are only the means of achieving of a goal rather than the goal itself.

The Institute of Medicine (IOM), in an attempt to provide a fresh equipoise, has produced a new report called 'Vital Signs: Core Metrics for Health and Health Care Programs'. The IOM, founded in 1970 in the US, provides national advice on issues relating to biomedical science, medicine, and health. It provides unbiased, evidence based, authoritative information. Its previous publications, such as 'To Err is Human' have helped to transform medical thinking around the world. In 2015, to date, 15 reports have been produced.

The current document Vital Signs, by its very nature, embraces the totality of public's wellbeing. There is an emphasis on the matters that will achieve better health and reduce premature death. The IOM outlines what healthcare can do for people and what people can do for themselves. The document describes a four domain framework, healthy people, care quality, low cost and engaged people.

There is a greater recognition by healthcare planners that ill-health arises from 2 main sources. The first is the random, unpredictable nature of a disease and its clinical processes and consequences. The second is the wide spectrum of pathological conditions that are derived partly or completely from poor lifestyle choices and poor uptake of simple preventive programmes. The latter is obviously targeted because it can potentially achieve rich dividends in a short timeframe.

The 15 key measures categorized by the IOM do not contain any surprises. They address the previously described origins of poor health. Good quality population health initiatives demand hard work, active participation, and self-restraint. The selected areas for consideration in the IOM document are life expectancy, well-being, overweight and obesity, addictive behavior, unintended pregnancy, healthy communities, preventive services, care access, patient safety, evidence-based care, care match with patients goals, personal spending burden, population spending burden, individual engagement, and community engagement. Suggested ways of recording measures include: number of years of healthy life lost before 80 years of age, number of years of healthy life lost because of obesity, proportion of patients reporting barriers to healthcare, and the proportion of care that is evidence based. Quality of life is the basic aim for all citizens. There is the simple logic that healthy people live longer.

The strengths of the IOM document is that it has produced a set of streamlined items that all health services can address. There are recommendations for their application at every level. Successful implementation of a metric will depend on its relevance, quality and usefulness to the caregivers. The IOM strongly emphasises the value of a parsimonious standard set of measures collected regularly and consistently across a nation. If a 'same set' is put in place nationally, the benefits will be greatly enhanced as comparisons can readily be mad between hospitals and regions. Quality and outcome measures are best derived from clinical data, while cost and utilization reports are produced from administrative. The IOM states that 'non-key' items, such as rating whether patients like their doctors, while attractive may not be very helpful. It is pointed out that such items offer little insight on the extent to which the patient is receiving a treatment based on best evidence, or whether their case is aligned with the goals most important for them.

Effective healthcare is very dependent on patient participation. Patients need to be able to make informed choices about the treatments that they receive. The IOM recommend that patients be given more information about the clinicians that care for them. Social networking sites are helping to provide the public with the information that they require. Patients fare better when they actively participate in their healthcare. Violence and injury are the major causes of death among young citizens. Among older patients, chronic diseases and their management are a major challenge.

The key measures laid down by the IOM can be applied to Irish healthcare. The life expectancy in Ireland for males is 78.3 years, and 83 years for females. The overall fertility rate is 2.1 children per woman. The replacement rate for a country is 2.0/woman. Rates below 2/woman represent societies decreasing in size and growing older. Many countries in the EU such as Italy and Germany have rates of 1 child/woman. The teenage pregnancy rate has decreased to 2.3%, the lowest since 1963. Ireland fares less well in relation to obesity. Recent data reveals that 66% of adult males and 51% of adult females are either overweight or obese. This compares unfavourably with the EU average of 47%. In relation to well-being, Irish people when to rate their general satisfaction with life on a scale 0-10 gave an average rating of 7. This compares well with the EU rate of 6.6.

The IOM document is an important contribution to the debate about setting directions and standards for health care.

JFA Murphy
Editor

1. Institute Of Medicine. Vital signs; core metrics for health and health care progress. Washington, DC. National Academies Press.; 2015 http://www.iom.edu/coremetrics
2. Blumenthal D, McGinnis JM. Measuring vital signs. An IOM report on core metrics for health and health care progress. JAMA 2015;313:1901-1901.

Stopping the Biological Clock – Who Benefits?

Eternal youth is here, at least for the females. This is what tabloids are trumpeting. The ability to store oocytes in order to prevent age-related fertility decline is being widely promoted in Ireland and worldwide, by both fertility clinics and the lay press. This service is referred to as 'social oocyte freezing' and is subject to significant medical, ethical, lawful and financial implications for both patients and assisted reproduction clinics performing the service. It is imperative that medical professionals suggesting 'social oocyte freezing' to their patients are able to provide detailed and accurate information, in order for an informed decision to be made. This review will detail the arguments for and against 'social oocyte freezing' and discuss the ethical and financial considerations for this controversial service.

Over the past decade the field of assisted reproductive technology (ART) has greatly advanced in the area of fertility preservation due to the push for a service for women and men with a malignant disease. Such patients face the risk of becoming infertile as a side effect of the gonadotoxic treatment they receive. The development of vitrification ("snap freezing") has revolutionised oocyte cryopreservation, leading to greater oocyte survival post-thaw and the potential for increased pregnancy rates[1,2]. However, in recent times, oocyte cryopreservation or 'oocyte freezing' is gaining considerable interest as a potential option for fertility preservation in women who wish to postpone childbearing for different reasons. Reproductive aging in females starts before they are born. The number of oocytes has reduced from 7 million in utero to 2 million at birth. This irreversible process creates a defined timeline for reproduction in females. Women are at the peak of their reproductive potential when they are in their twenties, with reproductive aging beginning when the woman reaches 30 years of age, resulting in decreased pregnancy rates and increased miscarriage rates[3]. After the age of 43 years, the chances of a woman becoming pregnant naturally or artificially are extremely reduced. Therefore, while the ideal age for 'social oocyte freezing'to be performed is when women are in their 20's, in reality, it is mostly performed after the age of 35[1,2]. Combining a career and motherhood at the same time is a challenge for many women today. 'Social oocyte freezing' offers hope to women who wish to have children later in life, but at what cost?

As women age, the quality and quantity of oocytes they produce dramatically decline, with the incidence of chromosomal abnormalities in oocytes increasing exponentially. This often leads to aneuploidy or a genetically abnormal embryo upon fertilization resulting in decreased pregnancy rates, increased miscarriage rates and increased neonatal genetic disorders[4,5]. Social oocyte freezing offers an option for women to preserve their own oocytes at the prime of their reproductive ability. This could potentially make high quality 'young' oocytes available to the woman later in her life. This would negate the need for egg/embryo donation and avoid the legal ambiguity surrounding such interventions. The probability of achieving a pregnancy following oocyte freezing (vitrification) is between 5-10% per oocyte thawed, depending on the age of the woman and the number of oocytes collected[1,2]. Oocyte freezing, while technically very successful, remains to be proven in terms of pregnancy. As a medical intervention social oocyte freezing has its inherent risks. All patients need to undergo hormonal stimulation, with ovarian hyperstimulation syndrome (OHSS, approximately 1%) and surgical complications, such as infection, bleeding, bowel injury at oocyte collection a reality (approximately 1/1000)[6].

As regards children born after ART there is an associated elevated risk of preterm birth and an increased genetic malformation rate in children born from the technology[7,8]. In general, the risks associated with ART are relatively low and in the case of infertility, considered acceptable by most couples and medical professionals. However, due to the lack of long-term follow up studies of children born from such interventions, there are still many unknowns. One consideration is the potential risk of epigenetic changes and imprinting defects following oocyte cryopreservation and in vitro culture of embryos[9,10]. The quality of oocytes should be unaffected by the duration of storage as these cells are in a "glass like" state. Yet, prolonged contact with the solutions they are frozen in has not been fully investigated.

Pregnancy at an advanced maternal age is also associated with increased maternal and neonatal risks including: hypertension, preeclampsia, gestational diabetes, placenta praevia, placental abruption, caesarean section, genomic disorders, premature birth, low foetal birth weight and neonatal morbidity[11]. The challenges of a newborn arrival in late adulthood must not be ignored, particularly if pregnancy is postponed in the late forties and early fifties. While the reproductive clock has been stopped, the biological one has irreversibly progressed and evidence suggests that majority of "old mothers" regret their decision to have a child so late in life[12,13]. Additionally, children born via oocyte freezing may be faced with taking care of their aging parents from a young age. The social and economic implications of aged-parental care on children and young-adults need also be considered when contemplating having children later in life. The potential associated risks to both mother and child, coupled with the low success rates per oocyte, need to be considered by fertile women thinking of undergoing social oocyte freezing to preserve their fertility. Oocyte cryopreservation can be an expensive procedure, and in Ireland, social oocyte freezing is paid for entirely by the woman/couple. In Ireland, the cost of only one cycle of ovarian stimulation with oocyte pick-up costs between €3,000 and €5,000. In most cases, several stimulation cycles are necessary in order to achieve oocyte numbers to give a positive chance of pregnancy. In addition to this price, annual storage costs have to be added. Finally, there is the additional cost of having, potentially several, thawing-transfer cycles (including fertilization with the partner's sperm) which cost approximately €1,000 per cycle.

The "commercialization of reproduction" raises many ethical issues. With the clinics providing such treatments benefiting from this emerging market, the American Society of Reproductive Medicine (ASRM) has warned about "giving patients false hope"[14]. In instances where social oocyte freezing is funded through government or company health insurance programs it is extremely necessary that the women undergoing the treatment fully understand the risks associated and the potential failure rates. One concern is providing false hope to women who delay having children at a young, fertile age only to undergo unsuccessful ART treatment using their frozen oocytes later in life. In Israel women between 30 to 41 years of age are able to undergo four oocyte-retrieval cycles funded by Israeli health funds[15]. These oocytes can be fertilized and transferred back to the woman up to 54 years of age. While ART makes it possible for women to get pregnant at an advanced age, it is important to consider the severe health risks associated with such a pregnancy. Additionally, the ability to care for a child or teenager at ages over 60 is a challenge and the ethics of such medical interventions need to be carefully considered.

Although social oocyte freezing does not solve the underlying problem of marrying a career with motherhood for women, in may be beneficial in specific situations. Informing patients of the potential health risks to themselves and the future child, the unknown long-term outcome of ART children and the relatively new technique of vitrification, in addition to the financial and psychological strain, are critical. Medical professionals proposing social oocyte freezing to their patients, should be up-to-date with all the above mentioned data. In addition, long-term follow-up studies on children born following social oocyte freezing programs are imperative. The large number of oocytes needed, in addition to the risks associated with ovarian stimulation and oocyte collection may deter women from availing of social oocyte freezing as a 'back-up plan' for their future fertility.

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The Budget Impact of Hepatitis C Treatment in Ireland 2001-2012

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

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Abstract
Chronic Hepatitis C (HCV) is estimated to infect 20,000 to 50,000 people in Ireland. National estimates of the number of patients who have been treated for HCV, their demographics and the cost associated with that treatment have not been published. Prescriptions for the treatment of HCV from 2000-2012 were established by interrogating the records of the High-Tech Drug Scheme and the pharmacy records of the Genitourinary Medicine and Infectious Diseases department of St. James Hospital. 2320 patients were initiated on treatment for HCV. Over €27 million was spent on HCV treatment. €25.5 million was spent on anti-viral therapy and €2 million was spent on haematological growth factor support for the management of adverse effects. The budget impact of HCV treatment has been significant in Ireland. New agents for HCV will have a greater budget impact but should require less spend on adverse event management.

Introduction

Chronic Hepatitis C (HCV) is an important public health concern with an estimated 20,000 to 50,000 people infected in Ireland[1]. Of those, only the minority (approximately 12,000) are diagnosed and fewer still (approximately 8,000) have engaged in tertiary level hepatology care[2]. At the present time, HCV therapeutics is undergoing enormous expansion with novel agents promising all oral regimens with minimal side-effects and excellent efficacy[3-6]. These new agents will be challenging to fund in the current fiscal environment although some of the costs may be off-set by a reduction in the number of patients progressing to end-stage liver disease and by a reduction in the costs associated with the management of haematological adverse effects generated by the current standard-of-care treatments. There has been progress made recently under the auspices of the Irish HCV Outcomes and Research Network (ICORN) and the National HCV strategy in improving our understanding of the HCV epidemic in Ireland[7,8]. However, national estimates of the number of patients who have been treated for HCV, their demographics and the cost associated with that treatment have yet to be published. Establishing such estimates gives a baseline against which to benchmark future treatment endeavours. It also gives an assessment of the capacity of national HCV treatment services that is useful for service planning. At the beginning of this new era in HCV care, we aimed to establish an estimate of the number of HCV patients treated from 2001-2012 and the drug costs associated with that treatment.

Methods

This study was carried out using data obtained from the Health Service Executive Primary Care Reimbursement Service (HSE-PCRS) pharmacy claims database. The HSE-PCRS is a national database used primarily to reimburse the provision of health care services and prescription medication in Ireland, through a number of national schemes, including the High Tech Drug Scheme (HTDS). The HTDS is a community drugs scheme that caters for high cost medicines initiated in hospital but subsequently dispensed in the community. Prescription medications dispensed

CPD available online at www.imj.ie and questions on page 191.

through the scheme are recorded in the HSE-PCRS database using the World Health Organisation (WHO) Anatomical Therapeutic Chemical (ATC) classification. The HSE-PCRS database also collates basic demographic information pertaining to each GMS claimant including age, sex and region. It does not, however, contain any clinical diagnosis or outcomes data. Prescriptions for the treatment of HCV infection were identified by searching for co-prescription of pegylated interferon 2 or pegylated interferon 2 along with ribavirin from 2000 to 2012 using the Anatomical Therapeutic Chemical (ATC) classification codes within the HTDS. The rates of co-prescribing of synthetic anti-anaemics (EPO), and granulocyte colony stimulating factor (G-CSF) were identified using the same methods.

The incident number of patients prescribed these medications was established through unique patient identifiers in the database. The costs of these prescriptions were quantified using unit drug costs from the national health payer adjusted for dispensing fees and discounts. As the treatment course for many patients' spanned different calendar years, the prevalence of HCV patients on treatment in a particular year is also presented to accurately reflect clinic capacity. If a treatment course spanned different calendar years, the costs are included in the year that they are accrued e.g. 48 week treatment course commencing in October Year 1 and completing in August Year 2. The cost of 13 weeks of treatment is captured and included in the total costs associated with Year 1 and the costs of 35 weeks of treatment is captured and included in the total costs associated with Year 2. Prescriptions dispensed to patients attending the Hepatitis C clinic based within the Genitourinary and Infectious Diseases (GUIDE) service in St. James Hospital are not captured through the PCRS database. Therefore, prescriptions dispensed to patients treated through this service were established through interrogation of the pharmacy records in GUIDE and the drug costs associated with their care were calculated. This was combined with the HTDS data to form an overall estimate of patient numbers and cost of drug treatment. Descriptive statistics are presented as sums, means and 95% confidence intervals. Analysis was performed using SAS v9.3 and Excel.

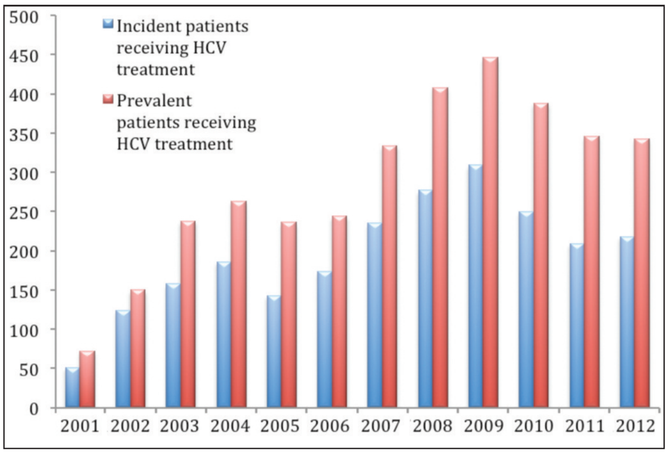

Figure 1 Annual number of Incident and Prevalent Patients receiving treatment for Chronic Hepatitis C

Results

There were 2398 courses of pegylated interferon and ribavirin administered to 2320 patients between January 2001 and December 2012. Annual prevalent treatment numbers peaked in 2009 with 446 patients receiving HCV treatment. Figure 1 displays the annual number of incident and prevalent cases receiving HCV treatment between 2001-2012. The majority of those treated were male (n=1567 (67%)) and aged between 25-45 years (62%).

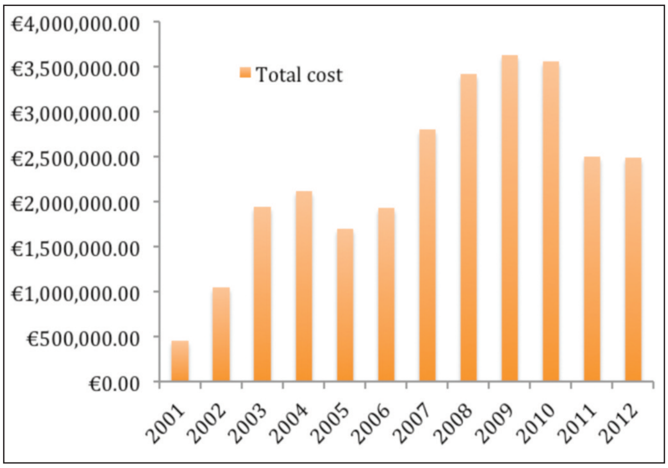

Figure 2 Annual total drug cost of HCV treatment including cost of antivirals and haematological growth factors

In total, €27,614,326 was spent on medication for the treatment of HCV between 2001-2012. Annual overall drug costs are presented in Figure 2. This comprised of antiviral costs of €25,550,270 (€15,460,488 for pegylated interferon and €10,089,781 for ribavirin) and €2,064,056 for haematological growth factor support (€1,406,381 for EPO and €657,675 for G-CSF). Figure 3 displays the annual cost of the antivirals and haematological growth factor prescriptions.

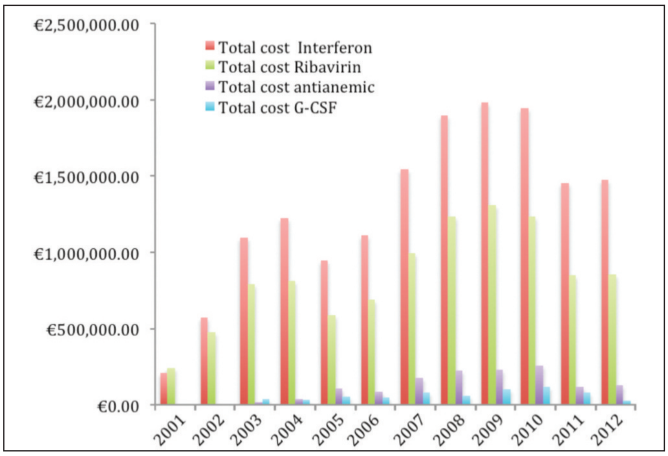

Figure 3 Annual drug cost of individual components of HCV treatment

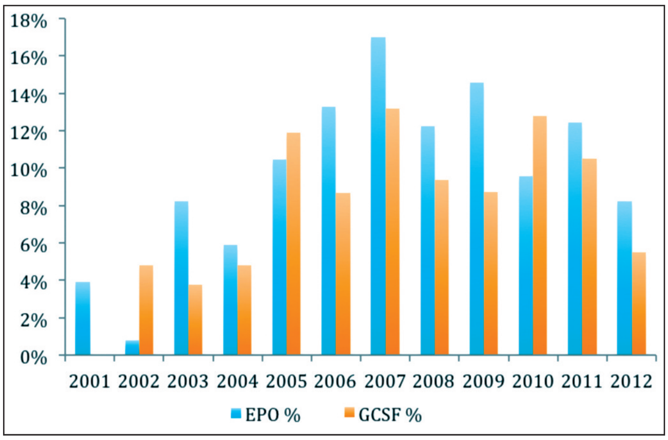

Figure 4 Percentage of incident prescriptions for haematological growth factor support in the setting of HCV treatment

The prescription of EPO and G-CSF in this setting peaked in 2007 with 17% of patients initiated on EPO (n=40/235) and 13% initiated on G-CSF (n=31/235). Figure 4.

The average cost per patient initiated on treatment for HCV was €11,771 (95% CI €11,376 – €12,166). The average cost of antivirals per course of HCV treatment was €10,845 (95% CI

€10,503-€11,187) and for haematological growth factor support, in those who received such therapy, €4,377 (95% CI €3,908 - €4,598). 10.8% of patients received treatment with EPO (n=252). The average treatment cost per course was €4728 (95% CI €4149-€5307). For those who received treatment with G-CSF (n=203), the average treatment cost per patient was €2,261 (95% CI €2,277 - €3,045).

Discussion

The morbidity and mortality associated with HCV infection, along with the global burden of disease, makes HCV treatment a worldwide priority[9]. The new interferon-free regimens greatly simplify treatment and remove many of the previous barriers to HCV treatment[10]. However, the drug costs associated with the novel treatment options represent a challenge to health-care payers in Ireland and internationally[11]. From the data presented above, treatment with pegylated interferon and ribavirin cost on average €11,000 per patient. As yet, we do not exact prices for oral regimens such as simeprevir plus sofosbuvir in Ireland. In the US, treatment courses of simeprevir plus sofosbuvir can be in the region of $150,000[12]. There is little doubt that the benefits of HCV treatment to the individual are considerable, with research demonstrating an improvement in health-related quality of life values in Irish patients achieving a sustained virological response or "cure"[13]. From the perspective of the health-care payer, it is possible that investing in HCV treatment at the present time may be cost-effective as it may lead to an avoidance of high-cost health states such as liver transplantation in the future. This has been demonstrated for first and second generation direct-acting antivirals in other healthcare settings[12,14,15]. A full cost-effectiveness analysis is being undertaken by the authors to establish whether the direct-acting anti-virals are cost-effective in the Irish health-care service.

The budget impact of HCV treatment from 2001-2012 has been significant in Ireland. Twenty-seven million euro has been spent on providing drug treatment for this indication. Two million euro of this budget was provided for haematological growth factor support. The novel interferon-free regimens would remove the need for G-CSF and those that are also ribavirin-free would remove the requirement for EPO support, as anaemia is not a significant adverse effect of the second-generation direct-acting antivirals[3-6]. Thus, the money that is currently being spent on the management of haematological adverse effects, could be redirected to the budget for anti-virals and provide a modest cost-offset. Hepatitis C treatment with pegylated-interferon and ribavirin is lengthy and very resource intensive. Patients experience a myriad of side-effects, both physical and psychological[16]. Because of this, they require a large amount of support and monitoring to enable them to complete their treatment regimens successfully. This limits the number of patients that an individual treatment centre can manage. The number of patients treated to date has been relatively modest, (in the order of 5-12% of affected patients), in part because of these capacity constraints. When developing budget impact estimates for the new direct-acting anti-virals, it is important to inform them with estimates of current service capacity. This data provides those figures. However, it is likely that a switch to all-oral regimens of shorter duration and reduced side-effects will result in an increase in capacity.

The role of treatment protocols and strong governance must be emphasised to ensure the appropriate and cost-effective use of these agents. Prospective outcome registries facilitate collection of data on prescriptions that can be linked with patient outcomes such as sustained viral response. The creation of the ICORN National Outcomes Treatment Registry is an important development in this regard and will provide real-world effectiveness data on the new agents as well as information on adverse effects and real-world cost of care.

There are some limitations with this data. The PCRS data is sourced from pharmacist reports which may underestimate usage as pharmacists receive a flat fee per month regardless of the number of drugs dispensed and will sometimes only report the first drug dispensed. Due to this it is likely that we have underestimated the total activity and costs of HCV therapy in Ireland. However, the inclusion of the data from the GUIDE department in St. James Hospital has been an important addition in improving the data capture and the robustness of the estimates. Ideally, the data on prescription and cost would be linked to clinical outcome data to give a more complete picture of the cost-effectiveness of HCV treatment. Unfortunately, this is not possible with the current PCRS database, as it does not include clinical data. The ICORN treatment registry will overcome these limitations in the future. While acknowledging these shortcomings in our data, we feel that it is useful to present an impression of the national activity and costs of HCV treatment over the past decade or so, and to provide an indication of the capacity of the HCV services in Ireland.

In conclusion, the budget impact of HCV treatment has been significant to the Irish healthcare system from 2001-2012. The advent of second-generation direct acting anti-virals provides the opportunity to treat more patients, more successfully for their HCV. While the funding for the new agents will pose a challenge to the healthcare services, there is likely to be a cost-offset from a reduction in costs associated with the management of adverse effects. A full cost-effectiveness analysis is currently underway to further examine this area and the data provided in this study will inform that study and health-care decision makers developing budgets.

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The Efficacy of COPD Outreach in Reducing Length of Stay and Improving Quality of Life

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Abstract
COPD exacerbations results in prolonged hospitalisation, re-admissions, reduces health-related quality of life (HRQoL) and increases mortality. The study aimed to assess the efficacy of a COPD Outreach service in reducing average length of stay (ALOS), reducing re-admissions within 90 days of admission, improving HRQoL and reducing mortality among COPD patients with acute exacerbations (AECOPD). AECOPD data for a 2 year period commencing September 2011 was analysed. The COPD Assessment test (CAT) quantified HRQoL at enrolment and 6 weeks post Outreach. COPD Outreach had an ALOS of 2.47 days compared to ALOS 8.59 days and 8.5 days for all AECOPD before and during an operational COPD Outreach. Re-admission rates among patients enrolled in COPD Outreach were 36.3%. CAT improved from mean 19.3 to 13.5. Mortality was 4.9% among Outreach patients and 2.5% for overall AECOPD in 2012-2013. COPD Outreach reduced ALOS and improved HRQoL for selected patients with AECOPD. It did not reduce re-admissions or mortality.

Introduction

Chronic obstructive pulmonary (COPD) is characterised by airflow limitation which is not fully reversible. It is the most common respiratory disease requiring acute hospitalisation and also the most frequent cause of hospital re-admission.[1] It is known that COPD is associated with significant morbidity, mortality and financial costs to the Irish healthcare system.[2] A European audit into COPD care in Ireland showed the average length of stay (ALOS) for patients with an acute exacerbation of COPD (AECOPD) was seven days, which equates to more than 100,000 inpatient bed days in Irish hospitals.[3] Mortalities occurring within 90 days of admission with an AECOPD also are a useful marker of disease management. Furthermore AECOPD, like other chronic disease portends to a low quality of life.[4] Recently, a national COPD Outreach programme has been introduced in twelve Irish centres with the aim of providing a Hospital at Home service for suitable patients with AECOPD. This has been shown to be safe and effective, with data from Beaumont Hospital and St James' Hospital in Dublin having confirmed similar efficacy of COPD Outreach programmes in the Irish setting.[5] The COPD Outreach service in Tallaght Hospital incorporating a respiratory senior physiotherapist, and respiratory nurse alongside respiratory physicians was introduced in 2012. The aim of this study was to assess the effectiveness of COPD Outreach in reducing ALOS, re-admission rate, improving health-related quality of life (HRQoL) and reducing mortality in Tallaght Hospital.

Methods

COPD Outreach care is a dynamic process under supervision of trained healthcare professionals. Patients with AECOPD are assessed and accepted onto the programme in relation to inclusion / exclusion criteria. Patients will be then followed for 2 weeks. Patient's GP will be made aware that care in relation to the patient's AECOPD remains under the clinical governance of the respiratory consultant for the period of the Outreach programme. Each patient has a customised discharge package involving followup home visits and review phone-calls as clinically indicated over a two week period. The programme is extended to include an outpatient followup review within the Outreach department at six weeks. The care package includes clinical assessments, medication & inhaler education, review of oxygen therapy, smoking cessation advice, dyspnoea management & chest clearance techniques, home exercise programme, nutrition education, and referrals to the MDT in primary or secondary care as required. Hospitals records of Outreach accepted patients were compared with COPD admissions from September 2011-September 2013. The Hospital In-patient Enquiry Scheme (HIPE) provided ALOS,total bed days (TBD),re-admission rates and mortality data. HRQoL information was collected on patients enrolled into the Outreach programme at the beginning and 6 weeks after enrolment, using the COPD Assessment Test (CAT).[6]

Table 1 Baseline characteristics of COPD Outreach enrolled patients

Parameter	Median
Age	67 years
Gender	66M / 95 F
Height	162cm
Weight	77.5kg
BMI	27.8
FEV1 [In liters]	1.2L
[Percentage predicted]	53%

Results

From September 2011 to September 2012 Tallaght Hospital had 584 acute admissions with AECOPD. The ALOS was 8.5 days. Eight patients died during the 90 day period after the acute hospitalisation. Re-admissions within a 90 day period totalled 165 cases (28.2%). From September 2012 to September 2013, the hospital admitted 726 cases with an AECOPD. The ALOS was 8.59 days. 18 patients died during the admission. Of these patients, 7 patients (39%) died within 90 days of admission. Re-

Table 2 COPD Outreach inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
▪ FEV 1 < 80% predicted,	▪ Suspected malignancy
▪ FEV 1 / FVC < 70% predicted,	▪ Pneumothorax, Pneumonia
▪ MMSE >7,	▪ Uncontrolled LVF
▪ Systolic BP > 100 mmHg,	▪ Acute ECG changes
▪ Arterial pH > 7.35, PO2 > 7.3 kPa, PCO2 < 8 kPa,	▪ Requires full time care. ▪ Insufficient home care,
▪ Total WCC 4 – 20 x 10	▪ Type I Diabetes
▪ Access to telephone	
▪ Adequate social support	

admissions within a 90 day period totalled 188 cases (25.8%). From September 2012 to September 2013, the COPD Outreach service reviewed 399 hospital admissions for potential inclusion on the Outreach programme. Of these, 161 patients with AECOPD met the inclusion criteria and were accepted for COPD Outreach. 66 were male, 95 were female. 237 patients were deemed unsuitable for the Outreach programme. Of the 161 cases enrolled, 111 were nonsmokers which included both lifelong nonsmokers and ex-smokers. The average time for patients to be enrolled onto the Outreach programme after a hospital admission was 1.4 days. ALOS of these 161 cases were 2.47 days.

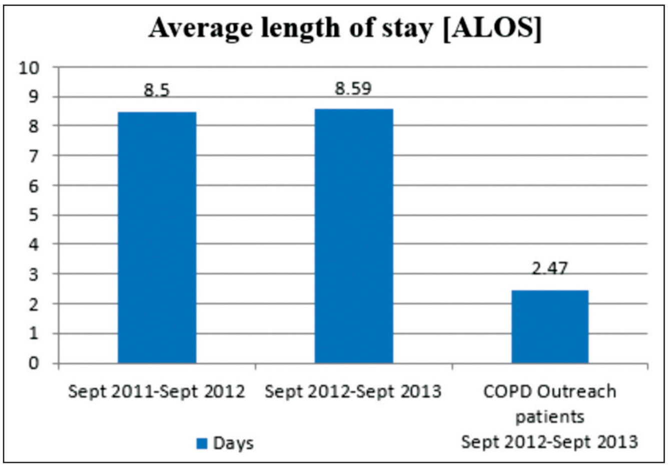

Figure 1

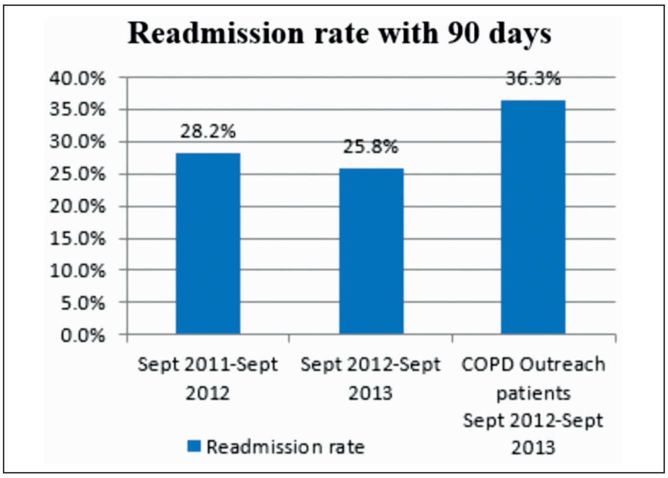

Figure 2

The re-admission rate within 90 days was 36.3%. The ALOS of initial cases of AECOPD enrolled to the Outreach programme was 4 days. The ALOS of re-admissions within 90 days alone was 6.6 days (Range=1- 39 days). TBD of all initial admissions discharged using the Outreach service was 1290 days. TBD of Outreach assisted discharges after subtracting re-admissions within 90 days TBD (614 days) was 676 bed days. The characteristics of the 161 patients are detailed in Table 1. 8 patients died after the COPD Outreach enrolment. Half of these mortalities occurred within 90 days of their initial admission. One passed away at home. One death happened during convalescence. 6 died in hospital. HRQoL improved significantly for all patients accepted onto the Outreach programme. CAT scores improved from a mean of 19.3 (±9.45) at enrolment to a mean of 13.5 (±7.61) after 6 weeks of COPD Outreach care. The COPD Assessment test (Total points=40) is a validated assessment of quality of life. Scoring more than 30 can indicate the disease has a very high impact on a health status. A difference equal or more than 2 point is clinically significant.[6]

Discussion

This study proved COPD Outreach service reduces ALOS for selected patients with an exacerbation of COPD. Patients included on the Outreach programme had an ALOS of 2.47 days in contrast to the ALOS of 8.59 days for total AECOPD. COPD Outreach also contributed to improved HRQoL scores after the 6 weeks programme; demonstrated by a mean increase of 5.8 points using the CAT. It did not reduce rate of re-admission of patients within 90 days of their initial presentation with an exacerbation of COPD. Furthermore there was no reduction in mortality with the Outreach service. ALOS is a good predictor of the cost benefit to a hospital's expenditure.[7] ALOS has proven to be a good key performance index translating into inpatient bed days saved.[2] Reducing ALOS allows more patients to receive treatment as beds are freed up. In a time of financial restraints, there is greater need to efficiently distribute healthcare. The National Clinical Care programmes were created as part of this demand.[7]

The National Clinical Care Programme for COPD was launched in 2011 with one of its key objectives being the implementation of the COPD Outreach programmes around Ireland.[8] Our data concurred with evidence from Beaumont Hospital and St James' Hospital that COPD Outreach reduced ALOS. International data has demonstrated similar findings.[5] In the year COPD Outreach was operational, the overall re-admission rate for all AECOPD in Tallaght dropped in contrast to the year prior to the programme (p=0.469). Interestingly the re-admission rate of only selected patients onto the Outreach programme was higher in contrast to both years with and without an Outreach service. This supports recent data which shows a statistically significant increase in hospitalisations in a subgroup analysis of patients receiving Outreach support.[9] However there was an overall cost savings to the hospital after including the cost of re-admissions as demonstrated in both total bed days saved and reductions in ALOS. We have noticed patients being labelled AECOPD for unrelated diagnosis particularly acopia which might explain why re-admissions are more prolonged after recent discharge with COPD Outreach. Another hypothesis is the possibility that patient education and self-monitoring may lead to overconfidence in symptom management and delay in necessary urgent initial therapy.[10] This then results in a treatment delay culminating in a need for a longer hospital admission. A suggestion to improve this is that Outreach patients are provided with more efficient self-monitoring information, emergency back up scripts, and clear contact information and advice to seek urgent medical attention in the event of clinical deterioration.

Depression is frequently reported in chronic diseases. In COPD it is noted as part of a vicious cycle involving poor health status, isolation, and a sedentary lifestyle.[11] We already know AECOPD reduces HRQoL.[4] Despite evidence of higher rate of re-admissions among COPD Outreach patients; it is reassuring that our dedicated COPD Outreach discharge does improve HRQoL scores. This concurs with the most recent Cochrane systematic review of previous randomised controlled trials which noted a significant increase in improvement of HRQoL with Outreach care compared to regular monitoring.[9] Disease education and behavioural modifications theoretically should result in improved patient outcomes. A recent review of self-management programmes concluded that despite sounding ideal, the evidence supporting these has been weak.[12] Patient education and feedback has been identified to significantly improve chronic disease management.[13] Our Outreach also emphasises a home exercise programme which has been shown to be as effective as hospital based pulmonary rehabilitation.[14] AECOPD are known to be associated with significant mortality and increases the risk of further mortality.[15] A non significant reduction in mortality was noted after 12 months of Outreach care by the Cochrane airways group. Unfortunately we could not demonstrate if an Outreach assisted discharge help reduce mortality among our patients with an AECOPD.

Mortality rate among the COPD Outreach patients were higher than the overall COPD admissions within the same year. Moreover we hypothesise that the apparent increased mortality data with Outreach may have been skewed by the fact mortalities after discharge among the overall cohort of AECOPD are not notified to the hospitals as they would have been, if they were under the supervision of an Outreach Respiratory service. Bereavements in the community where the GP would have certified the death individually without feedback to the hospital may have occurred. Currently no system is in place to record mortalities after discharge from hospital even in the case of a coroner inquiry into the death. This study is limited by the fact Outreach is only available to non-acidotic exacerbators. The ALOS of these patients could be naturally shorter even without Outreach assistance. An over-reliance on HIPE data to calculate overall hospital admissions with COPD may show a discrepancy as patients with breathlessness admitted under non-respiratory teams may be coded as a primary diagnosis of COPD which may be inaccurate. Commonly community acquired pneumonias and decompensated heart failure in known COPD patients can be misconstrued as an AECOPD. This study could be strengthened by analysing totality of presentations with AECOPD including presentations to the Emergency Department/AMAU without admission to hospital or review by COPD Outreach. These are patients who are fit for discharge by the ED/AMAU with antibiotics and steroid therapy who do not require Outreach input. A randomised study into comparing CAT scores at discharge and 6 weeks after discharge for all AECOPD would further validate the benefits seen with an Outreach service.

The future requires research into broadening the inclusion criteria for COPD Outreach patients. This will allow a greater impact into overall admissions with AECOPD. HIPE systems recording hospital admissions should also be broadened into collating data for ED/AMAU reviews to get a more complete picture of COPD presentations. Studies into subsets of COPD patients with higher re-admission rates are further necessary, and COPD Outreach service should be equipped with providing controlled oxygen therapy, portable trans cutaneous carbon dioxide and oxygen monitoring.

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The Silver Surfer: Trends of Internet Usage in the Over 65 and the Potential Health Benefits

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Abstract
The Internet provides medical information and interventions with promising benefits. This cross-sectional study explores trends in Internet use among the elderly in Ireland from 2002 to 2010 and considers possible implications for health benefit. Data were analysed on 1606 Irish individuals. Internet use in Ireland is increasing at similar rates to the rest of Europe; the percentage of over-65s using the Internet in Ireland nearly trebled from 2002 to 2010, from 26(8.3%) to 92(24.1%) ($p<0.001$). Subgroups of this population displayed significantly higher rates of Internet usage; namely those with a better education, living with a partner, males and urban dwellers. Of those with good subjective general health, 230 (21%) had internet access, versus 36 (7.1%) with poor health. Web-based interventions targeting the elderly should become more available. These could be particularly useful in populations with limited access to transport and mobility.

CPD available online at www.imj.ie and questions on page 191.

Introduction

Since the advent of the Internet in the mid-1990s, its availability and range of uses have grown enormously. Nearly 80% of Europeans have access to the Internet[1]. While the internet has been used to provide healthcare information since its creation, the quality of this information has long been debated[2] and many of the pros and cons of web-based information have been discussed[3]. Parents use the Internet to gain medical information about their children's conditions[4] and how people seek information pre-operatively[5]. Many go online seeking a diagnosis, although diagnostic skills of the Internet are somewhat lacking[6]. Recently, the Internet has been used for healthcare interventions. Many studies have looked at online peer-based support groups and, while these studies have had mixed results, it is an area with great potential that warrants further study[7]. Self-guided programmes delivered via the Internet aim to promote awareness and knowledge about medical issues enabling positive change[8]. These interventions are effective in the self-management of chronic illnesses. It is best demonstrated in diabetes[9], and chronic pain[10] but there is emerging evidence for online interventions in cardiovascular disease[11,12] including smoking cessation[13]. The interventions aid in the practical aspects of a disease (e.g. reminders to take medication, advice on how to control risk factors) and help with the emotional aspects of illness via chat-rooms and forums[14]. In addition to directed interventions there is preliminary evidence that Internet and e-mail use, in and of themselves, may improve cognitive functioning in the elderly[15].

Web-based interventions have shown promising results in mental health, specifically depression[16,17], anxiety[18] and substance misuse[19]. Internet Cognitive Behavioural Therapy (ICBT) has comparable efficacy to face-to-face treatment. Web-based interventions are a useful adjunct to clinician-delivered treatment, as well as an initial treatment for those reluctant to seek help[20]. The studies represent only the tip of the emerging iceberg. There has been a large interest in this area in recent times and much research is being conducted. The benefit of Internet therapies is that information can be delivered in a way that is appealing to patients, such as using audio-visual cues, interesting graphics and, perhaps most importantly, 24-hour access. Another key advantage is cost-effectiveness, as they require minimal expenditure after development[21]; a particularly appealing idea in the current economic climate. In the elderly population, the Internet has the potential to improve mental health. The increased rates of chronic illness, bereavement and social isolation expose older people to many risk factors for mental illness. Use of the Internet in the elderly can prevent loneliness[22] and online interventions are a viable option for those who have trouble seeking face-to-face healthcare (e.g. those with poor mobility or limited access to transport)[23]. Moreover, substance misuse and depression are common in the elderly and these disorders have been shown to be successfully treated via the Internet. This study will look at the trends in Internet use in the elderly over the last 12 years in Europe and, in particular, Ireland.

Methods

A cross sectional study was used to address the research question. Data from the European Social Survey (ESS) were analysed. The ESS is an academically driven biennial cross-sectional survey that has conducted surveys between 2002 and 2012. ESS data are available on an open-access basis at (http://www.europeansocialsurvey.org/). Data were collected by an hour long face-to-face interview[24]. In this study the primary outcome was Internet usage, recorded as a binary variable. Individuals who reported having "no Internet access at home or in work" and individuals who reported never using the Internet were classified as non-Internet users. Individuals who reported using it less than once a month or more were classified as Internet users. The primary exposure was the year the data were collected in. A number of potentially confounders were also examined. These included age, gender, living with a partner, level of education, physical health and whether the respondent lived in an urban or rural area. Living with a partner was chosen ahead of marital status as the data set was more complete and it was coded as a binary variable. Educational status was divided into those with "less than lower secondary education completed" and those with "lower secondary education completed" or higher. Individuals who described their domicile as being either a "farm or home in countryside" or "country village" were rural dwellers and those who reported themselves to be living in a "town or small city", "Suburbs or outskirts of big city" or in a "big city" were classified as urban dwellers. In terms of physical health, people who reported their subjective health as good or very good were classified as having good health while people who reported fair, poor or very poor health were classified as fair to poor. Subjective well-being was a measure of life satisfaction and happiness. Happiness and life satisfaction were ranked on a Likert scale ranging from 0 to 10. Higher scores corresponded to higher levels of subjective well-being. The response to both these questions were added together to provide a measure of subjective well- being. As a result, the range for subjective well being was from 0 to 20.

Binary logistic regression was used to assess the association between the year the data was collected and whether people had access to the Internet or not. Analysis was also stratified by potentially confounders. This study primarily focused on those over 65 living in Ireland but, where it was relevant, comparisons were made to other countries in Europe. All data were weighted according to the ESS guidelines[25]. Data were analysed using IBM SPSS statistics version 20.

Results

Data were analysed on 43,120 individuals over 65 across Europe. Our analysis focused especially on 1606 Irish individuals. The characteristics of the Irish and European population are presented in Table 1. Internet usage in all age groups in the European countries studied has nearly doubled over the five ESS rounds; from 37.2% to 62.7%. In the over-65s Internet usage has trebled across Europe; in 2002, 7.3% of the elderly used the Internet and, in 2010, this figure was 21.1%. Internet use among the elderly has increased broadly in line with the rest of Europe but we still lag far behind some European countries (Table 2). Older people in the Netherlands, Denmark, Sweden and Norway are more than twice as likely to have access to the Internet when compared to Irish people. Over the five ESS rounds, Internet usage in Ireland has continually increased. Overall, comparing 2002 to 2010, there was a 290% rise in Internet use. We found that on average there was a 41% rise every two years in the proportion using the Internet ($p<0.000$, 95%CI 28 to 55). After controlling for age, gender, subjective health, whether a person lives with a partner or not, educational history and area of residence there was a 63.0% (95% confidence intervals 44.5% to 83.6%, $p<0.001$) increase in Internet access every two years. This is compared to TV watching in the over-65s which only saw a 3.1% rise (64.1% to 66.1%) and both radio listening and newspaper reading which have actually decreased since 2002. Stratified analysis identified a number of sub-groups who had lower rates of Internet access (Table 3).

Gender

Irish females were less likely to have access to the Internet compared to their male counterparts OR 0.69 (95% CI 0.53 to 0.90). While Irish females are less likely to have access to the Internet, their Internet access is growing at nearly twice the rate of their male counterparts. Males on average see a 28.7% (95% confidence interval 13.6% to 45.6%, $p<0.001$) rise, while females have seen a 61.2% (95% confidence interval 37.8 to 88.7%, $p<0.001$) rise during each two year period.

Age

While those aged over 74 are much less likely to have access to the Internet, again, this group is seeing a more rapid increase. In the 65-74 year olds there was a 38.4% (95% confidence interval 24.4% to 54.0%, $p<0.001$) increase in those with Internet access

Table 1 Characteristics of the Irish and European populations analysed

	Ireland	Europe (including Ireland)
ESS Round		
Round 1 (2002)	313 (19.5%)	6747 (15.5%)
Round 2 (2004)	351 (21.8%)	8200 (18.8%)
Round 3 (2006)	256 (15.9%)	9197 (21.2%)
Round 4 (2008)	305 (19.0%)	9973 (22.9%)
Round 5 (2010)	382 (23.8%)	9384 (21.6%)
Internet access		
Yes	267 (16.6%)	5203 (12.9%)
No	1336 (83.4%)	35098 (87.1%)
Gender		
Male	818 (50.9%)	19349 (44.5%)
Female	783 (48.9%)	24146 (55.5%)
Living with partner/spouse		
Yes	964 (60.3%)	25565 (58.8%)
No	634 (39.7%)	16796 (38.6%)
Subjective general health		
Good	1101 (68.5%)	14223 (32.8%)
Fair/Poor	505 (31.4%)	29139 (67.2%)
Age group		
65-74	1021 (63.6%)	26705 (61.4%)
Over 74	586 (36.4%)	16796 (38.6%)
Area of residence		
Urban	746 (46.6%)	27517 (63.4%)
Rural	854 (53.4%)	15879 (36.6%)
Education		
Less than lower secondary	1096 (68.6%)	23966 (55.4%)
Lower secondary or higher	502 (31.4%)	19297 (44.6%)

Table 2 Percentage with internet access over 65 between 2002 and 2010 across Europe. Only including countries which provided data for all 5 rounds

	Round 1 (2002)	Round 2 (2004)	Round 3 (2006)	Round 4 (2008)	Round 5 (2010)	Total
Ireland	8.3	9.8	16.4	23.9	24.1	16.7
Netherlands	20.6	27.2	33.8	47.3	57.0	37.2
Denmark	16.1	25.8	31.6	45.0	55.0	36.5
Sweden	16.2	22.5	30.0	37.9	53.0	32.1
Norway	9.9	22.3	25.5	47.8	50.8	31.0
Switzerland	11.7	18.1	26.1	30.9	37.7	24.3
United Kingdom	13.1	12.7	23.5	29.4	35.6	23.8
Finland	8.7	13.2	18.7	24.5	30.4	19.2
Belgium	7.0	8.6	12.7	19.8	31.4	15.9
Portugal	17.7	2.1	3.5	6.3	7.5	6.6
Slovenia	2.3	2.4	6.9	8.8	8.4	5.8
Hungary	0.3	4.3	4.4	8.3	9.8	5.5
Spain	1.7	2.5	2.9	3.2	14.9	4.9
Poland	1.2	0.8	2.1	5.8	8.1	3.6

Table 3 Internet access in the over 65 in Ireland in varying populations

	No Internet Access (%)	Internet access (%)	Degrees of freedom	Chi squared	Test for diff in means
ESS Round			4	54.48	<0.001
Round 1	286 (91.7%)	26 (8.3%)			
Round 2	314 (90.2%)	34(9.8%)			
Round 3	214 (83.6%)	42 (16.4%)			
Round 4	232 (71.6%)	73 (32.9%)			
Round 5	289 (75.9%)	92 (24.1%)			
Gender			1	7.68	0.006
Male: N (%)	660 (80.9%)	156 (19.1%)			
Female: N (%)	672 (86.0%)	109 (14.0%)			
Subjective general health			1	47.63	<0.001
Good	867 (79.0%)	230 (21%)			
Fair to poor	468 (92.9%)	36 (7.1%)			
Area of residence			1	26.21	<0.001
Urban	582 (78.2%)	162 (21.8%)			
Rural	748 (87.8%)	104 (12.2%)			
Living with spouse/partner			1	36.73	<0.001
Yes	758 (78.8%)	204 (21.2%)			
No	571 (90.3%)	61 (9.7%)			
Education			1	47.63	<0.001
Less than lower secondary	1019 (93.2%)	74 (6.8%)			
Lower secondary or above	310 (61.9%)	181 (38.1%)			
Age			1	62.83	<0.001
65-74	793 (77.8%)	226 (22.2%)			
Over 74	543 (93.1%)	40 (6.9%)			

in each two year period, however, there was a much larger increase in those over 74 of 66.4% (95% confidence interval 28.4% to 66.4%, p<0.001)

Living Alone

Table 3 shows those who live alone are less likely to have access to the Internet but what is also worrying is that those who live alone have seen a slower growth in access to the internet over the ten year period of the study (28.9% compared to 47.8% every two years).

Education

Those with a history of leaving education earlier are less likely to have access to the Internet but this population has a faster rate of increase in online access (62.2 compared to 46.0% every two years)

Geographical Location

The increase in access of the Internet has occurred at a similar rate in urban and rural settings.

Subjective Wellbeing and Subjective Health

Internet access has increased at similar rates between those with good and poor subjective health. Analysis was done on the Irish population to see if there were higher rates of subjective wellbeing in those with Internet usage compared to those without and, whilst there was a small increase in subjective wellbeing in those with access to the Internet, no statistically significant difference was found (p=0.178).

Discussion

This study highlights the potential of Internet-based interventions to improve healthcare in the elderly. We demonstrated how Internet use amongst over-65s both in Ireland and the EU is increasing; nearly trebling over the ten year period. Online interventions have many benefits for older people as they may overcome impaired mobility, social isolation and limited access to transport. Existing online interventions should be tailored to older people and new services should be developed. Such interventions could include appointment reminders, medication reminders, medical education and ICBT. The ESS data did not allow analysis of how older people use the Internet. This is a significant limitation of the study as we cannot establish that the internet is being used as source of health related information for older people. Future research on what older people use the Internet for and levels of online literacy would be helpful. In comparison with reading the newspaper, listening to the radio and watching TV, this study shows that Internet access is the most rapidly growing medium for conveying information in those over 65. Internet access is becoming an important factor in healthcare and has a similar level of importance as literacy. As such, it is a key component of any social history and physicians should routinely enquire about it.

This study identified populations less likely to have access to the Internet, namely – those over 74, females, rural dwellers, those living alone, those with poor health and those who spent less time in formal education. Those living alone may be at particular risk. These populations may be more socially isolated and may benefit the most from access to the Internet. Where possible, linking these individuals with classes on how to use the Internet could improve quality of life and have health benefits[15]. We would support the establishment of Internet courses for elderly people and further study into the potential of Internet access and online-based interventions in older people.

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An Observational Research Study to Evaluate the Impact of Breakthrough Cancer Pain on the Daily Lives and Functional Status of Patients

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Abstract
Breakthrough cancer pain (BTcP) is common, resulting in significant physical and psychosocial morbidity. We assessed the impact of BTcP on 81 cancer patients attending Irish specialist palliative care services. BTcP occurred up to twice daily in 24 (30%) and 3-4 times daily in 57 (70%) of cases. Median scores for the 'worst' and 'least' pains in the previous 24 hours were 7 and 2/10 respectively. Pain lasted <15 minutes in 19 (23.5%), 15–30 minutes in 25 (30.8%), 30–60 minutes in 18 (22.2%) and > 60 minutes in 19 (23.5%) of patients. BTcP had a negative impact on general activity, mood, walking ability, work, relations with others, sleep and overall enjoyment of life. BTcP increased anxiety, depression, anger, isolation, financial difficulties and an inability to undergo cancer treatments. Systematic assessment of BTcP should form an integral part of every oncology/palliative medicine assessment. Once identified, BTcP should be managed assiduously.

Introduction

Fifty years ago this year, Cicely Saunders described how terminal cancer patients with intractable pain typically experienced a 'steady background pain' and intermittent exacerbations.[1] More recently in 1990, Portenoy and Hagen first suggested that the transient increases in pain experienced by a cancer patient, with otherwise stable background pain should be defined as breakthrough pain.[2] In in the intervening period, the term breakthrough pain has been used to describe a variety of clinical entities,[3] perhaps reflected in the wide range in the reported prevalence of breakthrough cancer pain from 24% to 95%.[4] In an attempt to bring clarity a 2009 task force of the Association for Palliative Medicine of Great Britain & Ireland proposed the following definition: "A transient exacerbation of pain that occurs either spontaneously, or in relation to a specific predictable or unpredictable trigger, despite relatively stable and adequately controlled background pain"[5]. Based on this definition, breakthrough cancer pain specifically excludes those patients with inadequately controlled background cancer pain. A typical breakthrough cancer pain episode is of rapid onset, is often severe in nature, rapidly reaches peak intensity and lasts approximately 30 minutes.[4,6] Breakthrough cancer pain is associated with significant physical, psychosocial and economic burdens on patients and their carers. Such patients report being less satisfied with their analgesic therapy, describe decreased functioning and may also experience increased levels of anxiety and depression.[6,7] This is the first multi-centre study conducted exclusively in the Republic of Ireland to explore and describe the range of impacts due to breakthrough cancer pain on the daily lives and functional status of patients with cancer referred to specialist palliative care services the Republic of Ireland.

Methods

Following an invitation from the principal investigator to all specialist palliative care services in Ireland to participate, five services agreed to take part in this multi-centre study. The local investigator at each site invited suitable patients to participate in the study. Eligible patients were those aged over 18 years with a diagnosis of cancer and could provide written informed consent. Patients who had stable background cancer pain and were maintained on around the clock strong opioid analgesia, despite which they experienced up to four episodes of BTcP in a 24-hour period could be recruited from one of a variety of settings including specialist palliative care inpatient unit (hospice), acute general or specialist hospital and community-based specialist palliative care settings. In order to limit the burden on participating patients to the greatest possible extent, this multi-centre observational study utilised a single assessment including a questionnaire designed specifically for the study. The first section of the questionnaire involved a series of screening questions to ensure that all relevant inclusion and exclusion criteria were satisfied. Basic demographic data, location of primary tumour and functional status as measured by the ECOG score were recorded.[8]

The next phase involved a series of questions relating to breakthrough cancer pain. The final part of the assessment involved the completion of the Brief Pain Inventory (short form) version 0.2. (Copyright 1991, Charles S Cleeland, PhD, Pain Research Group). Patients who satisfied strict inclusion criteria were recruited opportunistically rather than sequentially in each of the settings where specialist palliative care is delivered, the inpatient (hospice) unit, the acute hospital and in the community. In the clinical context, making an absolute distinction between poorly controlled background pain and true breakthrough cancer pain can be challenging. Every effort was therefore made to exclude those patients with inadequately controlled background pain, specifically those subjects reporting more than an average of four breakthrough cancer pain episodes per 24 hours. Subjects who, in the investigator's opinion, had any concurrent medical condition precluding the patient's ability to participate in the research study were also excluded. The study was approved by each local research ethics committee and was conducted in accordance with all relevant national and international guidelines for the conduct of clinical research. Each patient was provided with an information sheet and only those who met all of the inclusion criteria and who gave written informed consent were recruited. Statistical analysis was undertaken by the Health Research Board (HRB) Clinical Research facility at the National University of Ireland, Galway.

Table 1

Site of primary disease	n (%)
Breast	10 (12.3)
Gastrointestinal	13 (16.1)
Gynaecological	13 (16.1)
Haematological	3 (3.7)
Head & Neck	9 (11.1)
Lung	14 (17.3)
Melanoma	3 (3.7)
Other	5 (6.1)
Urological	10 (12.3)
Unknown	1 (1.2)
Total	**81 (100)**

Table 2 Duration of breakthrough cancer pain episodes. n=81

Duration	Female	Male	All
< 15 minutes	6 (14.3)	13 (33.3)	19 (23.5)
15 – 30 minutes	13 (30.9)	12 (30.8)	25 (30.9)
30 – 60 minutes	12 (28.6)	6 (15.4)	18 (22.2)
> 60 minutes	11 (26.2)	8 (20.5)	19 (23.4)
All	42 (100.0)	39 (100.0)	81 (100.0)

Results

Eighty-one subjects were enrolled in the study. Fifty-two percent were female. The median age of female subjects was 58 (39 – 80), and of male subjects was 68 (38 – 83). The primary sites of cancer as presented in Table 1 are broadly consistent with the incidence of invasive cancers amongst the general Irish population.[9] Performance status Performance status was assessed using the Eastern Cooperative Oncology Group (ECOG) score for each subject. Subjects reported varying degrees of functional impairment as represented by ECOG scores of 0 in 1.2%; 1 in 23.5%; 2 in 35.8%; 3 in 33.3% and 4 in 6.2% of patients. It is noteworthy that only one patient in the group had a normal score of 0 indicating that they were fully active and able to carry out all activities without restriction. Details of BTcP Twenty-four patients (29.6%) reported experiencing an average of 1-2 episodes per 24-hour period, whilst 57 patients (70.4%) reported experiencing 3-4 episodes on average per 24-hour period. Over half reported that their lasted for less than 30 minutes. The duration of breakthrough cancer pain episodes is presented in Table 2.

Table 3 Practical and emotional implications of breakthrough cancer pain. n = 81

Practical implications	Yes n (%)	No n (%)
Limit or stop your usual work	71 (87.7)	10 (12.3)
Restrict social contacts	63 (77.8)*	17 (21.0)*
Consult doctor / nurse more frequently	58 (71.7)	23 (28.4)
Difficulty coping with cancer treatment or tests	30 (37.0)	51 (63.0)
Experience financial difficulties	20 (24.7)	61 (75.3)
Emotional implications		
Anxiety	54 (66.7)*	26 (32.1)*
Depression	38 (46.9)	43 (53.1)
Anger	38 (46.9)	43 (53.1)
Isolation	34 (42.0)*	46 (56.8)*

*Missing data

Sixty-nine subjects (85%) had experienced breakthrough cancer pain on the day of the assessment. They described a median score for the for BTcP "right now" and for pain in the previous 24 hours of 2, and a median score for the worst BTcP in the past 24 hours of 7/10. Impact of BTcP The majority of subjects reported having to limit or stop work, with associated financial implications for some. Over three quarters had to limit their usual social contacts.

Table 4 Pain interference with activities. n=81

	Mean	Median	Standard deviation
General Activity	5.1	5.00	3.37
Mood	3.96	4.00	2.98
Walking	4.80	5.00	3.69
Normal work	6.45	8.00	3.97
Relations with people	4.12	4.00	3.71
Sleep	3.71	3.00	3.45
Enjoyment of life	6.09	7.00	3.54

Subjects also reported high levels of anxiety, depression, anger and isolation. A more detailed analysis of the practical and emotional implications of breakthrough cancer pain is presented in Table 3. Patients reported that breakthrough cancer pain had a significantly negative impact on a range of life activities and functions including general activity, mood, walking ability, work (in the home and outside), relations with other people and sleep. Measured on an 11 point numerical rating score where 0 signifies 'does not interfere' and 10 signifies 'completely interferes', the median score for interference with overall enjoyment of life was 7 (Table 4).Seventy-two patients (88.9%) reported feeling that their healthcare professionals understood their pain. Patients were also invited to describe in their own words the experience of suffering uncontrolled breakthrough cancer pain. This analysis will be the subject of a separate report.

Discussion

This is the first study of its kind to focus exclusively on the burden and impact of breakthrough cancer pain in Irish specialist palliative care. As pain is a complex and unique and subjective experience[10] we set out to give cancer patients who were experiencing BTcP a voice. We sought neither to apply statistical significance to their descriptions nor to demonstrate any cause-effect associations between the presence of breakthrough cancer pain and any self-reported consequences. We simply documented the patient's individual account of his or her experiences and their conclusions drawn from them. We let the patients speak and the study's validity rests in their narrative. The majority (70.4%) of our study population reported experiencing 3-4 BTcP episodes on average per 24 hour period. Not surprisingly, an increased frequency, severity and/or duration of these pain episodes had a profoundly negative impact across a range of domains, representing compromise of each individual's quality of life. The typical duration of a BTcP episode in our study is quite short with 54% reporting that their pain resolved within 30 minutes of onset. In a survey of 1000 European oncology patients from 13 countries (including Ireland), Davies et al reported a median duration of BTcP of 60 minutes (< 1 minute – 360 minutes).[11] BTcP was rated as severe by our patient group as evidenced by a median score for the 'worst pain in the past 24 hours' of 7 (0 – 9) while in the Davies study, 62% patients rated their pain as 'severe'.

Breakthrough cancer pain is associated with a multiplicity of negative practical, social and financial consequences for patients in addition to impacting on their ability to endure cancer treatments. In our study the emotional distress was manifested as anxiety, depression, anger and isolation. When one considers these additional and potentially avoidable stressors on an already heavily-burdened population, it is self-evident that this phenomenon requires far greater attention and a more urgent focus from physicians and other healthcare professionals alike. One interesting finding of our study was that seventy-two patients (88.9%) reported that their healthcare professionals understood their pain. This is a surprisingly high figure when one considers the evident burden of uncontrolled pain in the same population. The early pioneers of hospice and palliative care services focused attention on the burden of uncontrolled pain in cancer. In 1980 the Working Group on Terminal Care noted that 'pain is a major problem among terminal cancer patients' and made the astute observation that 'most of the pain is unnecessary and due to poor medical management'.[12] Over the past three decades, we have made great strides in our understanding of the nature and pathogenesis of cancer pain. Sadly, many patients in Europe and indeed across the world, still experience inadequate cancer pain management because of excessive restrictions on the availability and accessibility of opioids'.[13] As in all situations in medicine, unless we recognise this problem, we are unlikely to be in a position to correct it. In this instance, we have the tools that we need and simply need to apply well published principles consistently and rationally.

As a starting point, we must ensure that we include a detailed assessment of cancer pain for all patients attending for review in both hospital and community settings. Unless and until we routinely record the presence and severity of pain, both background and breakthrough, it seems unlikely that we will make significant progress. Though we took care to exclude patients with poorly controlled background pain and select only those with 'pure' BTcP, we acknowledge that in the clinical context these distinctions are not always clear. We recruited patients in an opportunistic or convenience sample, in part to avoid adding additional burden to an already heavily-burdened (and fatigued) population. Our data did not enable an attempt to be made to distinguish between spontaneous breakthrough cancer pain and incident pain. Our patients, recruited from specialist palliative care settings, may represent a sub-group with more advanced and progressive disease atypical of all cancer patients in the population. In conclusion, BTcP is burdensome across a range of physical and emotional domains and is associated with impaired enjoyment of life. Systematic assessment of breakthrough cancer pain should form an integral part of an oncology or palliative medicine assessment. Once identified, breakthrough cancer pain should be actively and skilfully managed.

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A Series of Oral Lesions Presenting to an Otolaryngology Department

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Abstract
This study was performed to assess the incidence and intraoral distribution of different mucosal lesions in a representative population. Retrospective review of clinical notes and assessment of histology reports of patients were performed, who presented with different oral lesions to University Hospital Galway, between January 2007 and December 2008.Of the 106 histology reports evaluated, 94 were identified as benign lesions while 12 were malignant lesions. 96 of these patients were referred from G.P services, 6 patients were referred from other departments while 4 patients came through emergency department by self referral. The numbers and incidence of the commonest lesions in order of frequency were chronic inflammation 20 (18.8%), papilloma 19 (17.1%), fibroma 09 (8.4%), mucocele 09 (8.4%) and leukoplakia 08 (7.5%).We concluded that majority of the presented oral lesions are benign (88.7%). Chronic inflammation (18.8%) is the commonest benign oral lesion and all white lesions which represents 34% of oral lesions are not true leukoplakia.

Introduction

The vast majority of soft tissue lesions occurring in the oral cavity are hyperplastic inflammatory responses to local trauma or infection. They may be predominantly of epithelial or connective tissue origin or a combination of the two tissues. Clinically the distinction between reactive hyperplasia and benign neoplasia remains somewhat arbitrary.The anatomical sites forming the oral cavity under the American Joint Committee on Cancer (AJCC) classification, starts at the vermilion borders of the upper and lower lips and ends at the arch of the anterior pillars[1]. The oral cavity contains many organs and tissues in a compressed small area, accordingly oral lesions have a wide variety of appearances which includes fibroma, papilloma, traumatic ulcers, leukoplakia, mucosal cysts, benign and malignant tumours. Fortunately the majority of these lesions are benign as shown in previous studies[2,3], although some may be pre-malignant or malignant. Majority of the oral lesions presents with few symptoms like discomfort in the mouth and alteration in the surface texture representing as a mass or lesion, but rarely it may be painful and ulcerative in appearance. Biopsy and histological evaluation of the tissues excised, is the final diagnosis in all these cases and for best management plan it is necessary to divide them histologically between benign and malignant. For this purpose oral pathologists use the term epithelial dysplasia to indicate microscopic features in a biopsy specimen that are associated with malignant changes. There is a good correlation between higher grades of dysplasia and increasing risk of cancer[4]. Although simple conservative excision is sufficient management in most cases but some lesions like leukoplakia requires prolonged follow-up which merit discussion. This paper discusses the incidence and presentation of all these clinical lesions.

Methods

Following appropriate Ethics committee approval, a retrospective study was performed, which included all cases of oral lesions undergone biopsy or excisional biopsy in our department over a 2 year period from January 2007 to December 2008. Lesions were defined to be within the limits of the oral cavity based on the AJC and UICC classification systems. All histology reports were evaluated in detail and divided into benign and malignant groups. We began initially by reviewing the medical notes of all patients which were included in this study. The histological reports were taken as final diagnosis. The major group of benign pathology were divided into different named sub groups as shown in Table 2. Further data collected from the medical notes were age, sex and the method of presentation of the patients. A note was made of the source of referral of all the cases. Clinical symptoms were noted as were findings on clinical examination prior to biopsy. Final evaluation of the clinical notes was about the history of smoking and alcohol use for each patient.

Table 1 Percentage of benign and malignant lesions

Type of lesion	Number	Percentage
Benign	94	88.7%
Malignant	12	11.3%
Total	106	

Table 2 Different types of benign lesions

Benign Lesion	Number	Percentage
Chronic inflammation	20	18.8%
Papilloma	19	17.9%
Fibroma / Fibroepithelial polyp	09	8.4%
Mucocele / Cyst	09	8.4%
Leukoplakia	08	7.5%
Benign mixed tumours	06	5.6%
Normal mucosa with salivary tissue	05	4.7%
Pyogenic granuloma	03	2.8%
Focal fungal infection	03	2.8%
Actinic keratosis	03	2.8%
Lichen planus	03	2.8%
Traumatic hyperplasia	02	1.8%
Epulis	02	1.8%
Submandibular duct stone	02	1.8%

Results

106 oral lesions were biopsied or excised during the 2 year study period and were therefore suitable for inclusion in our study. The mean age at presentation was 50.74 years and males and females were equally represented. 72 patients (67.9%) were above the age of 40 years and 34 (32.1%) were below 40. Of the 106 histological reports evaluated, 88.7% (94) identified benign lesions and 11.3% (12) identified malignant lesions of the oral cavity (Table 1). Medical notes and histological reports were available for review in all cases. The most common benign lesions identified histologically were chronic inflammation (18.8%), papilloma (17.1%), fibroma (8.4%) and mucocele (8.4%). Leukoplakia, which is considered to be the most common pre-malignant oral lesion, was the 5th most common benign oral lesion (7.5%) identified. Benign mixed tumours comprised 5.6% (Table 2). The most common site of presentation for chronic inflammation was the oral tongue (8/20), while papilloma and fibro-epithelial polyp presented most frequently on the buccal mucosa (8/19 & 4/9 respectively).

Mucocele occurred most frequently on the lower lip (4/9), while leukoplakia was located most frequently on the buccal mucosa (3/8) (Table 2). All 12 malignant lesions of the oral cavity identified were squamous cell carcinomas. All 12 malignant lesions were identified in patients above the age of 40 years, and there was equal distribution of cases between males and females. 10/12 cases were referred by their General Practitioner, while 2 cases were referred from our emergency department with late advanced disease. 50% (6/12) of patients with malignant lesions were smokers while 42% (5/12) were non-smokers (smoking status was unavailable for one patient). The distribution of histological grades of tumour differentiation were, carcinoma in

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situ (1/12), well differentiated (3/12), moderately differentiated (6/12) and poorly differentiated (2/12). The most common sites of presentation were; lateral border of the tongue (8/12), buccal mucosa (2/12), the floor of mouth (1/12) and lower lip (1/12) (Table 3).

Table 3 Malignant lesions (12/106)

	No	Incidenc
Age		
Above 40 years	12	
Below 40 years	00	
Sex		
Male	06	
Female	06	
Referral		
G.P	10	
A&E	02	
Smoking		
10-20 cig / day	06	
non smoker	05	
not known	01	
Site		
Tongue lateral border	08	7.5%
Cheek mucosa	02	
Floor of mouth	01	
Lower lip	01	
Histology		
Carcinoma in situ	01	
Well differentiated	03	
Moderately differentiated	06	5.6%
Poorly differentiated	02	

Discussion

The oral mucosa, like any other epithelial surface can vary in appearance of health. In disease state the variation from the normal can be quite subtle or very obvious. These pathologies are regularly encountered by clinicians but their real incidence is not yet known. The data in this institutional based study involves all age groups and is nearly equally distributed among male and female, as described in other studies[5,6]. It is obvious from the results that both benign and malignant lesions are more common in patients above the age of 40 years except mucocele (8.4%) which were common in younger age groups. Inflammatory / reactive lesions were the predominant diagnostic group (18.8%), which presented either as discoloration of oral mucosa (white, grey), or as painful ulcer. No previous studies have reported this condition as the commonest lesion, probably because of the fact that most studies were population based prevalences of oral lesions[7,8].

Papilloma (17.9%) and fibroma (8.4%) were the second and third frequent lesions in this study. To most practitioners these two lesions appear the same, but infact they are quite different clinically and histologically. A Papilloma is a benign proliferation of stratified squamous epithelium resulting in a papillary mass, while a fibroma is a firm, smooth-surfaced, pink, sessile nodule, resulting from hyperplastic fibrous connective tissue, in response to local irritation or trauma. Under the microscope viral-altered clear epithelial cells with small dark nuclei can be seen in the prickle cell layers in cases of papilloma, moreover papillomas are recurrent and needs follow-up[9]. Leukoplakia which is the commonest oral pre-malignant lesion, is defined by W.H.O as a white patch that cannot be rubbed off and cannot be characterized clinically or histologically as any other disease[10]. It is thus a clinical description and a diagnosis of exclusion. In this study also 34% of benign lesions presented as white patches / lesions and were categorized as leukoplakia clinically, but histologically they were diagnosed as chronic inflammation, papilloma, lichen planus, focal fungal infection and actinic keratosis. It suggests that all clinically white looking lesions are not true leukoplakia, and the actual incidence of leukoplakia is only 7.5%. Despite these facts we cannot ignore the importance of taking biopsy in cases of persistent white lesions of the oral cavity, as a 4—6% risk of malignant change in all leukoplakic lesions is always present[11]. If untreated a dysplastic lesions will change to carcinoma during a mean period of 33.6 months[12]. This indicates that all leukoplakic lesions need to be followed up for at least 3 years even after complete excision. Leukoplakia is diagnosed more frequently now than in the past, probably because of the increasing awareness among health professionals rather than because of a real increase in frequency.

In this study 5 patients (4.7%) were referred by our Rheumatology colleagues for lower lip biopsy to diagnose Sjogren's syndrome. All of the five histology reports showed normal mucosa with underlying normal salivary tissues. As none of these reports showed any features suggestive for Sjorgen's syndrome, the efficacy of this invasive investigation for diagnosing Sjogren's syndrome is questionable. Actinic Cheilosis is a pre-malignant lesion caused by ultraviolet radiation to the sun exposed lower lip. In this study 3 (2.8%) reports have shown hyperpigmentation of the basal layer with moderate dysplasia. All the 3 patients were male, above 60 years of age and the lesions were excised from lower lip, which are typical features for this condition[10]. Similarly other rare lesions detected were Pyogenic granuloma (2.8%), Lichen Planus (2.8%), Focal fungal infection (2.8%) and Traumatic hyperplasia (1.8%). The importance of diagnosing them most accurately, is to distinguish them from the pre-malignant lesions which are Leukoplakia and Actinic Cheilosis. For practical purposes all physician should be able to recognise these lesions and make appropriate referrals for biopsy and treatment.

In this study 11.3% of the lesions were diagnosed as malignant. The annual incidence rate (the number of newly diagnosed cases per 100,000 persons each year) of malignant lesions in USA is 11—15 %, which is the same as we found in our study. Histologically all patients were reported as Squamous cell carcinoma which is in comparison with a recent study in USA, showing 94 % of oral malignant lesions consists of squamous cell carcinoma[13]. Tobacco use and heavy alcohol consumption are the two principal risk factors, accounting for 75% of oral carcinomas[14]. We found all the patients with malignancy were above 40 years of age and 50% of them were heavily smoking 20 or more cigeretes per day. As noted in other studies the commonest site for malignant process was lateral border of the tongue, followed by cheek mucosa and floor of mouth. Histologically all the 12 patient's reports were evaluated for clearance margins. In 7 (6.6%) of the reports there was no mention about this important indicator by the pathologist. We recommend more uniform reporting for all tumours, as to help clinician in the treatment and follow-up. Majority of oral lesions are benign (88.7%). Most oral lesions are hperplastic response to chronic irritation. All white lesions (34%) are not true leukoplakia, the incidence of leukoplakia is (7.5%). Histology reports of malignant lesions should be more standardized in terms of clearance margins.

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Maternal Obesity and Neck Circumference

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Abstract

Obese women are more likely to require general anaesthesia for an obstetric intervention than non-obese. Difficult tracheal intubation and oxygen desaturation is more common in pregnancy. Failed tracheal intubation has been associated with an increase in neck circumference (NC). We studied the relationship between maternal obesity and NC as pregnancy advanced in women attending a standard antenatal clinic. Of the 96 women recruited, 13.5% were obese. The mean NC was 36.8cm (SD 1.9) in the obese women compared with 31.5cm (SD 1.6) in women with a normal BMI ($p<0.001$) at 18-22 weeks gestation. In the obese women it increased on average by 1.5cm by 36-40 weeks compared with an increase of 1.6 cm in women with a normal BMI. The antenatal measurement of NC is a simple, inexpensive tool that is potentially useful for screening obese women who may benefit from an antenatal anaesthetic assessment.

Introduction

Based on a Body Mass Index (BMI) > 29.9 kg/m^2, maternal obesity is associated with an increase in pregnancy complications and interventions[1,2]. In particular, it is associated with interventions that may require general anaesthesia, such as caesarean section[2,3]. Outside pregnancy, difficult intubation is more common in obese than in lean patients. In a French study, a difficult intubation occurred in 15.5% (n=138) of patients with Class 2-3 obesity compared with 2-3% of lean patients (n=140)[4]. In another French study, difficult intubation occurred in 14.3% (n=10) of obese patients compared with 3.0% (n=2) in lean patients ($p=0.03$)[5]. The authors recommended that neck circumference (NC) should be measured preoperatively as a predictor of difficult intubation. There is a paucity of information about NC in pregnant women. The purpose of this longitudinal observational study was to examine the relationship between NC and maternal BMI as pregnancy advances.

Methods

Women who were attending a standard antenatal clinic were recruited at their convenience. Women had their weight and height measured in the first trimester before calculating the BMI. Clinical and sociodemographic details were recorded at the first antenatal visit after sonographic confirmation of an ongoing pregnancy. Women with a multiple pregnancy, women <18 years old and women who were unable to give consent were excluded. A single researcher (BA) then measured the neck circumference at the level of the thyroid cartilage with the head erect. This was carried at 18-22 weeks gestation, and repeat in the same population of women at 36-40 weeks gestation. The tape was held snug without compressing the skin.

Results

The patient characteristics are shown in Table 1. Of the 96 the mean age was 29.9 years (SD 5.71 (24.12346-35.60569)). The mean BMI was 25.4kg/m^2 and 13.5% were obese based on a BMI > 29.9 kg/m^2. The mean maternal NC analysed by BMI category is shown in Table 1. There were five (38%) women with a NC >39 cms in the obese women compared with 0% in the non-obese women (n=83) ($p<0.001$). Obese women had a greater NC than women with a normal BMI but the increase in NC as pregnancy advanced was similar. This indicates that a screening NC in early pregnancy could identify those obese women who are at a higher risk of a failed intubation.

Discussion

This observational study found that the mean NC was significantly higher in obese women and that in both obese and non-obese women it increased as pregnancy advanced. We suggest that before term, the obstetrician also measures the NC in all obese women. Outside pregnancy a NC>43cm is associated with a problematic intubation in about one in twenty cases[5]. Pregnancy is a unique state which causes physiological and anatomical changes that result in difficult airway. These changes are more pronounced in the pre-eclamptic woman, with higher rates of pre-eclampsia seen in obese women[6-8]. Given these physiological and anatomical changes, a smaller neck circumference than 43cm found to cause difficult intubation in non-pregnant women, is likely to cause difficulties. In an obese woman with an increased risk, skilled anaesthetic assistance and a wider range of equipment to facilitate intubation should be available[4].

Table 1 Mean maternal neck circumference analysed by BMI category

BMI category	NC at 18-22 weeks (cm)	NC at 36- 40 weeks (cm)	Change in NC (cm)
Normal	31.5	33.0	1.6
Overweight	33.7	34.8	1.1
Obese	36.8	38.2	1.5
Total	34.0	35.4	1.4

This study has strengths because BMI was calculated on measurement of weight and height which has been shown to be more reliable than self-reporting. We also have measured NC accurately at different time points during the pregnancy. A weakness of this pilot work is that the numbers were small and the recruitment was convenient and not consecutive. About one in six women booking for antenatal care in our Hospital is obese and they are a group who are at risk of an adverse outcome is increased if the patient requires intubation. The measurement of NC is a simple non-expensive screening tool which should be evaluated further in a larger prospective study.

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A Review of Potentially Inappropriate Prescribing in Over 65's in Livinghealth Clinic

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Abstract

Polypharmacy and potentially inappropriate prescribing (PIP) are areas of growing importance and concern. Optimising drug prescribing in older people is challenging and complex at the individual GP level. At a national level it is an important public health issue for the care and management of the ageing Irish population. The aim of this study was to estimate the prevalence of PIP in Livinghealth Clinic using the STOPP (Screening Tool for Older Persons' Prescribing) criteria and to identify areas of PIP. LHC audits demonstrated PIP levels of between 16% and 29%. Our findings were similar to other studies in that proton pump inhibitors (PPIs) at maximum therapeutic dosage for >8 weeks, and long acting benzodiazepines prescribed for >1 month, continue to be significant areas of PIP. However, not all identified PIP maybe inappropriate. The STOPP criteria are a useful screening tool for older persons' prescribing, but are best used together with clinical assessment and discretion.

Introduction

More than 1 in every 5 elderly patients attending primary care services in Ireland is being prescribed an inappropriate medication[1]. Polypharmacy is loosely defined as being prescribed > 6 medications on a recurring basis. PIP is defined as taking a medication for the wrong indication, without indication, at the wrong dose or for the wrong length of time. PIP has been formally defined by the Bier's Criteria, the IPET criteria[2] and the STOPP/START criteria[3]. PIP in the over 65s has been associated with increased levels of morbidity and mortality[4,5], poor compliance[6,7], and to be financially wasteful[8,9].

Methods

For the baseline audit, through random sampling, 56 patients over 65 years were identified who were on a regular prescription and 65 STOPP indicators were applied to this group. For the review and post-implementation audits the full STOPP criteria was applied to 118 patients, all of whom were over 65 years GMS patients on regular prescriptions. Each patient's medical history and prescriptions were checked.

Table 1 PIP using the STOPP criteria audit findings

	BASELINE AUDIT August 2013	REVIEW AUDIT August 2014	POST-STOPP November 2014
Total study sample	56	118	118
No. of Patients ID	9 (16%)	33 (28%)	34 (29%)
Breach incidences	N/A	42	43

Results

In the baseline audit, 30 patients were taking > 6 medications on a regular basis. 9 patients (16%) were in breach of the STOPP criteria. The age distribution of inappropriate prescribing was 22% 65-69years, 39% 70-74 years, and 39% 75+years. (55% = M, 45% = F). Age and gender distribution were similar in subsequent audits. In the review audit, 33 patients were identified in breach of the STOPP criteria with 42 breach incidences. After implementation of the STOPP criteria another audit identified 34 patients to be in breach of the STOPP criteria, with 43 breach incidences. The top 4 PIP breaches were: patients prescribed aspirin without a history of coronary, cerebral or peripheral arterial symptoms or occlusive event. Patients prescribed a PPI at full therapeutic dosage for > 8 weeks. Patients prescribed long acting benzodiazepines for > 1 month, and patients prescribed any regular duplicate drug class.

Discussion

The national level for PIP in primary care is between 21.4 - 35%[10]. This latter figure is based on an Irish study in which 30 STOPP indicators were applied to prescription claims data in patients 70 years and over. LHC's initial audit finding (16%) was below the national level however in subsequent audits PIP was higher (29%). Not all the identified PIP may be inappropriate, the STOPP criteria are a useful screening tool for older persons' prescribing in primary care, but are best used together with GP assessment and judgement. The small sample size is a limitation of this study. Moreover a longer period of time post-implementation may have yielded improved PIP results. The data for the PIP national level is over 5 years old so may not reflect current national levels.

The total number of prescriptions issued in LHC during August & November 2014 was 17,231 and 17,551 respectively. This confirms GP prescribing workload and the significance of selecting the appropriate medications. Subsequent to these audits a laminated copy of the STOPP criteria is in each consulting room. When GPs are reviewing prescriptions they document in the patients notes if they made the appropriate change, or that they didn't make the change but had a definite reason, or that a change would be done at the next review. EK Walsh et al[10] discussed how a ten minute dedicated medication review reduces polypharmacy in elderly patients and how this may reduce patient's risks of PIP associated morbidity and mortality as well as wasteful practices. The STOPP criteria is a useful tool to help identify PIP in elderly patients, many of whom have complex medical comorbidities and demanding pharmacological needs and we would encourage GPs to use it. In our small study we found polypharmacy to be one of the main determinants of PIP and that the potential for PIP increases with increasing age. National targeted interventions are required to improve the quality of prescribing in these patient groups. In conclusion, through our structured re-audit programme follow-up audit will be conducted to assist improving processes of care and patient safety.

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The Bhutani Nomogram Reduces Incidence of Severe Hyperbilirubinaemia in Term and Near Term Infants

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Abstract

Very high bilirubin levels can have devastating neurodevelopmental effects on infants including hearing loss and cerebral palsy. A previous study in our institution determined the rate of, and factors associated with, bilirubin values above exchange transfusion level. Since this study the Bhutani nomogram was introduced to help identify infants at risk of severe hyperbilirubinaemia. In our study we looked at the initial serum bilirubin taken in infants ≥36weeks and ≥2.5kgs. Our results show that since this nomogram was introduced there has been a significant reduction in the number of infants reaching exchange transfusion levels. We also showed that the Bhutani nomogram could successfully be used in a population of unknown direct Coombs status.

Introduction

Severe neonatal hyperbilirubinaemia can lead to devastating acute and long-term neurological complications including deafness and cerebral palsy.[1,2] Among the preventable factors leading to severe hyperbilirubinaemia in the first days of life are inadequate risk-assessment prior to hospital discharge and early discharge home of term or near term infants without adequate follow-up of bilirubin levels.[3-5] The Bhutani nomogram (Figure 1) is in widespread use in the USA and Canada for early identification and assessment of infants at risk of severe hyperbilirubinaemia.[4] It can be applied once an infant is 12 hours old. This nomogram stratifies risk for later development of hyperbilirubinaemia requiring treatment into low-risk, low-intermediate risk, high-intermediate risk and high-risk groups. It is of proven value in estimating risk in populations who are known to be direct Coombs test negative. Previously, we reported on the incidence of severe hyperbilirubinaemia at our institution.[3] Following this study the Bhutani nomogram was introduced into clinical practice as part of the systematic approach to identify, treat and follow up infants at risk of severe hyperbilirubinaemia. Treatment of severe hyperbilirubinaemia may require exchange transfusion. The aim of our study was to see if the introduction of this nomogram had led to a reduction in cases of infants presenting with an initial total serum bilirubin (TSB) above exchange transfusion level.

Methods

Prior to discharge every newborn infant has a transcutaneous bilirubin (TcB) level checked (using the JM-103® "Bilimeter"). TcB is then followed by TSB measurement and direct Coombs testing if the operating range of the bilimeter is exceeded (over 200μmol/l) or if the infant falls into the high-intermediate or high-risk group on the Bhutani nomogram. If this TSB level is below treatment level, the Bhutani nomogram helps the physician decide what follow up is needed. For example, high-risk infants on the nomogram should have jaundice reassessed within 12-24 hours. This is a retrospective study comparing our results with the results from a previous study. This previous study looked at cases of infants reaching exchange transfusion level in our hospital.[3] We used similar methods and exclusion criteria to the previous study to ensure accurate comparison.

The Bhutani nomogram was introduced into practice in our institution in mid-2011. We determined the initial TSB taken in a population of infants ≥36 weeks gestation and ≥2.5kgs, born in 2012, who were cared for on the post-natal wards. We excluded infants of mothers who were Rhesus negative or who had atypical antibodies as these infants had their direct Coombs' status known from cord blood sampling. This allowed us to establish the efficacy of the nomogram in a population of infants of unknown direct Coombs' status. These TSB values were obtained from our lab database. We took the first measured TSB value for every infant who had a TSB measured between 12-144 hours of life. We plotted initial TSB values on the American Academy of Pediatrics exchange transfusion graph.[5] We compared these results to the previous study. Mann-Whitney U test used to compare mean TSBs and mean time of first TSB. Fisher's Exact test was used to compare numbers requiring exchange transfusion.

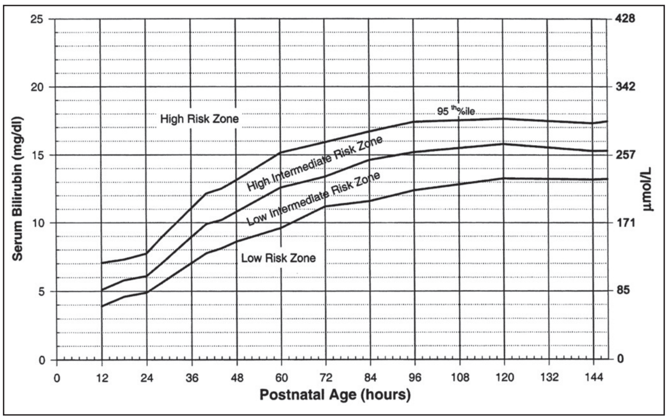

Figure 1 Bhutani Nomogram. ©2004 by American Academy of Pediatrics.

Results

There were 8288 infants eligible after exclusion criteria. Of these, 1001 infants had at least one TSB performed. We compared our 2012 results with the results from the previous study performed over two years (2007 and 2008). Table 1 shows that TSBs were performed earlier (mean 57.1hours), with average TSBs being lower (mean 173µmol/L). When compared to the previous period of observation, where there were 14 infants above exchange transfusion level, the current study shows that no infant reached this level.

Discussion

Since the introduction of the Bhutani nomogram there has been a significant reduction in the number of infants reaching exchange transfusion levels. Bhutani's original study when formulating the nomogram excluded infants known to be direct Coombs positive.[4] This study shows that the Bhutani nomogram can also be successfully used in a population of unknown direct Coombs' status. The rate of TSBs being performed increased since the introduction of the nomogram. However this level is still lower than the rate of TSBs being performed where TcB is not being utilised.[3]

Table 1 Comparison of patient numbers and TSB values

Years	**2007 & 2008**	**2012**
Infants >36weeks and ≥2.5kg	15,851	8288
Infants with at least 1 TSB performed	1645 (10.4%)	1001 (12.1%)
Max TSB (mol/L)	673	349
Mean TSB (mol/L) p<0.001	209	173
Mean time of first TSB (Hours) p<0.001	65.4	57.1
Near (within 50 mol/L) Exchange Transfusion Level p=0.11	16 (0.97 %)	4 (0.4%)
Number with TSB Above Exchange Transfusion p=0.002	14 (0.85 %)	0

Abb: TSB: total serum bilirubin.

In conclusion the Bhutani nomogram can be effectively used to predict risk of severe hyperbilirubinaemia and determine appropriate follow up and monitoring of high-risk infants. We recommend that the Bhutani nomogram be utilised in all Irish maternity hospitals as part of a systemic approach to reduce the risk of bilirubin encephalopathy and kernicterus.[5,6].

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Acquired Anterior Laryngeal Web in a Shotgun Injury

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Abstract

We report the first case of an anterior laryngeal web post gunshot wound in the modern literature. A 27 year-old man suffered a close range shotgun injury to his neck. He presented with stridor and a large open neck wound. Emergency tracheostomy was required. A postoperative fibreoptic laryngoscopy revealed anterior glottic web formation. This case report highlights the difficulties in managing acquired anterior laryngeal webs and reviews the only other case in the in the literature from 1915.

Introduction

The vast majority of anterior laryngeal webs are congenital developmental defects in infants. Acquired webs are frequently due to iatrogenic trauma or less commonly with infections such as diphtheria[1]. We describe an extremely rare case of anterior glottic web formation in a patient after a gunshot injury to neck.

Case Report

A 27 year-old male suffered a shotgun wound to the left side of his neck. This was at close range and on presentation he was aphonic and stridulous. A lateral radiograph of the neck on presentation showed the distribution of the shot (Figure 1). He had a traumatic intubation and had a tracheostomy performed between the second and third tracheal rings. Direct laryngoscopy showed an oedematous epiglottis and vocal cords. No major vascular injury was found on neck exploration. There was a large amount of soft tissue loss, but there was no evidence of disruption

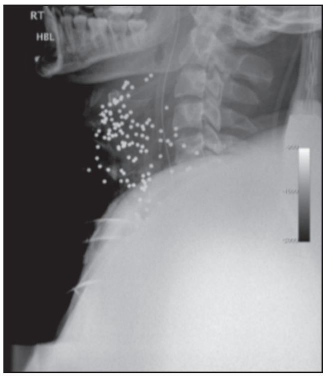

Figure 1 Plain x-ray on admission

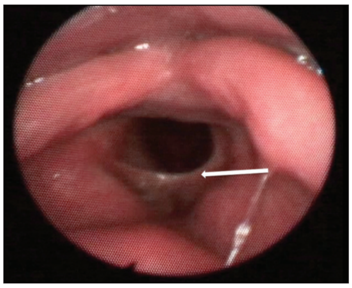

Figure 2: Anterior laryngeal web

of the laryngeal framework. Subsequent CT scanning of his larynx was non-contributory due to the extent of streak artefact (Figure 2). The patient recovered well, however he continued to be markedly dysphonic. At ten days post injury flexible laryngoscopy revealed the development of an anterior laryngeal web. Several weeks later, a repeat direct laryngoscopy was attempted, but access proved difficult due to poor flexion of his neck and edema and redundancy of the vestibular folds. A laser excision of the supraglottic tissue and partial resection of the web was carried out. The patient's voice improved from a whisper but remained obviously hoarse. Subsequent flexible laryngoscopy demonstrated that the anterior laryngeal web persisted. The patient was considered for a laryngo-fissure approach with keel insertion or the use of a flexible bronchoscope with laser division of the web. However, the patient declined both options. The tracheostomy was decannulated and he is currently under review.

Discussion

Laryngo-tracheal trauma is life threatening. Shotgun wounds from close range (less than 3 meters) are classified as type 3 injures, which usually involve massive tissue mutilation[2]. The most fundamental therapeutic goal for patients with laryngotracheal injury is airway control by tracheostomy or endotracheal intubation. Similarly, patients who need neck exploration for control of bleeding should have the extent of the airway injury assessed at the same time by laryngoscopy and bronchoscopy. Although not in this case, computerised tomography is often a useful diagnostic tool to ascertain damage to laryngeal structure after trauma. Its role is emphasised even after a normal flexible laryngoscopy[3]. Management of anterior laryngeal webs depend on the severity of the insult. A small thin anterior web with good voice may be treated conservatively. If phonation is affected, laser resection, with or without a stent may be employed[4,5]. An anterior thick web without subglottic extension may be treated with a web split (open or endoscopic) with sialistic keel. An anterior web with subglottic extension would need a laryngo-tracheal reconstruction with cartilage graft[5,6].

There is one similar case in the literature. A British soldier survived a gunshot injury to neck at the battle of Ypres during the First World War. The patient had ongoing dysphonia and laryngeal examinations revealed an anterior laryngeal web to account for his symptoms. This case was discussed at the Royal society of medicine meeting at London in 1915 by a panel of eminent laryngologists of that time. A conservative approach was favoured over an open laryngo fissure and splinting[7]. Our patient survived a potentially fatal injury. Although a moderate level of dysphonia remains, he is content with his voice and refused any further procedures. The patient is only the second reported case of anterior glottic web after gunshot injury to neck in the literature, and the first in 100 years.

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Medical Record Documentation Among Interns: A Prospective Quality Improvement Study

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Abstract

Comprehensive record keeping is a key aspect of medical practice. The National Hospitals Office (NHO) and Irish Medical Council (IMC) have published guidelines in this area. A prospective audit of 100 patients assessed by interns was performed to quantify adherence with these guidelines followed by an educational session and email reminders. Adherence was reassessed in an incidental manner. Compliance was recorded in a number of areas including the reason for review and documentation of a plan both 98 (98%). However less than half of interns recorded the patient's name, background history or their impression of the case. Only 31(31%) noted the patient's MRN and only 1(1%) the information they gave to the patient. Significant improvements following the intervention were found, however significant deficits remained in a number of areas including the noting of an impression of the case 62(62%) and information given to patients 18(18%). Suboptimal documentation can be improved through education and clinical auditing.

Introduction

Medical records (MR) form the basis of information available to a physician in any given patient encounter. Furthermore they provide vital information for research, audit and medico-legal purposes[1]. Accurate MR allow more efficient data interpretation. This translates into improved quality of patient care through informed decision making, auditing and monitoring an institutions' performance[2]. Incomplete or inaccurate MR documentation has the potential to cause adverse patient outcomes as well as adverse medico-legal consequences. Previous studies have reported that clinically significant errors in MR documentation are common in practice[3]. With this in mind The NHO has published guidelines regarding the minimal acceptable standards required in MR documentation[4]. Included in these standards are recording of the identity of the patient and doctor and the time and date the patient was reviewed. In addition the record itself is advised to include the reason for the encounter, a case review, an impression of the current situation, a plan, and the information given to patients. The IMC introduced a new record keeping obligation for physicians in the Medical Practitioners Act 2007 (Section 43(8))[5]. This requires medical practitioners to include their Medical Council record number (MCRN) as well as their name when making entries in the MR. Our study sought to determine to what degree the interns at a university teaching hospital were adherent to these recommendations while on call and how this adherence would be affected by an educational session focusing on the recommendations and their importance to clinical care.

Methods

This study was a prospective audit. The study was carried out in the Acute Medical Assessment Unit (AMAU) of St James Hospital (SJH), Dublin. SJH is a large university teaching hospital serving as a secondary care centre for its local catchment area. The design philosophy of the AMAU was to retain the traditional team structure and continuity of care with a personal physician for each patient, but to underpin this with a nursing and allied support team dedicated to Acute Medicine. The operation and outcome of the AMAU to 2012 has been described elsewhere[5]. A prospective chart review was carried out of 100 patients reviewed by interns on call over a three-week period. All reviews assessed were between the hours of 5pm and 9am. For each patient the entry in the MR at the time of review was scrutinized. The medical records were compared to national standards as published by the NHO[4]. The recommendations of the NHO are detailed in Table 1. In addition we assessed compliance with the recommendation by the Medical Council for doctors to include their MCRN in all documentation[5]. All medical records were examined and the data entered into a database by one of the authors.

Two weeks after the conclusion of the initial review a teaching session on documentation requirements was conducted by one of the authors as part of the scheduled SJH intern teaching program. Furthermore an interactive discussion of the topic was held. A copy of the recommendations for MR documentation was sent to all interns. Four weeks after the educational session a second prospective chart review was conducted. This used identical methodology to the first by the same reviewer. For each variable assessed the two groups were compared using a two-tailed Fisher's exact test. GraphPadInStat version 3.10 (GraphPad Software, San Diego, California, USA) was used for all statistical analysis. The study was conducted in accordance with the audit guidelines of SJH.

Table 1 Intern Compliance with Documentation Guidelines before and after Education

Variable	Before	After	P-Value
Name	45 %	81 %	<0.0001
MRN	31 %	75 %	<0.0001
Date	98 %	95 %	0.4448
Time	54 %	80 %	<0.0001
Signature	90 %	95 %	0.2828
Dr. Name	62 %	91 %	<0.0001
Dr. Title	88 %	85 %	0.6796
Bleep	85 %	92 %	0.1827
MCRN	76 %	92 %	0.0033
Black Ink	99 %	96 %	0.3687
Reason	98 %	100 %	0.4975
Case Review	46 %	78 %	0.0001
Impression	47 %	62 %	0.0465
Plan	98 %	98 %	1.0000
Info Given	1 %	18 %	0.0001

Results

Over the duration of the study 200 MR entries were reviewed, 100 in the initial review and a further 100 in the re-audit. All patients were under the care of medical consultants and were assessed in the AMAU following emergency medical admission through the Emergency Department. The results of the audit are summarized in Table 1. Good baseline compliance was recorded in a number of areas including the reason for seeing the patient and documentation of a plan (both 98%). However a number of deficits were identified in the initial audit with just under half of interns recording the patient's name, background history or their impression of the case. In addition only 31(31%) noted the patient's MRN and only 1(1%) the information they gave to the patient. There were significant improvements in the majority of assessed variables following the intervention. The only areas in which significant improvements were not seen were those requirements where baseline compliance was already high 85(85%). However significant deficits remained in a number of important areas including the noting of an impression of the case 62(62%) and the information given to patients 18(18%).

Discussion

The results of our study demonstrate a high level of compliance with MR keeping prior to our intervention. Deficiencies were noted in areas with the potential for clinical consequences. Encouragingly, following our educational intervention the majority of these improved significantly. Residual deficiencies, particularly in the documentation of an impression and the information given to patients remained, indicating a need for further strategies to target improvement. Our study has suggested that increasing intern's awareness of the standards required from their records and the clinical implication of these through inclusion in medical education can improve MR keeping significantly. This is particularly important, as previous studies have suggested that the majority of documentation errors made come from junior doctors[7,8]. The majority of the interns included in our study reported that our educational session was the first occasion on which they had any formal training in MR documentation. Our results suggest that the inclusion of such a session in the teaching provided at the commencement of the intern year would be beneficial.

In the past decade research has suggested that a move to automated electronic systems have the potential to dramatically reduce medical errors through automated MR keeping[9]. However implementation of this technology will likely not become widespread in the near future due to economic and logistical concerns[10]. Many studies have cited electronic MR keeping as the solution to these deficiencies[3,9,10]. However MR keeping in Ireland remains predominantly paper based, with an estimated 17-40(17-40%) of Irish GP practices exchanging medical and administrative data electronically[11]. This indicates that there is still a need to strive for improved MR keeping using more traditional methods such as education supported by clinical audits and feedback for our junior physicians. Previous studies in this area have also identified deficiencies in a number of areas of MR keeping but have not focused on the NHO guidelines. Daly et al evaluated the quality of history and physical examination notes among doctors finding deficiencies in a number of areas. While the overall quality of documentation was relatively good, key areas where performance was suboptimal were identified including physician identifiers and the documentation of an impression of the case[12]. In 2010, a study from our institution investigated compliance with the IMC directives on physician identification in MR[13]. In this study 8(8%) of entries included no form of physician identification. With regard to individual areas a signature was included in 52.45(52.45%), bleep number in 63(63%), and MCRN in 0.86(0.86%) of cases. While there has been a modest improvement shown in our figures, our initial results were still far from acceptable.

Although our study identified a lack of awareness in MR keeping secondary to sub-optimal education, it could not identify confounding factors contributing to MR omissions. Further studies would do well to focus on this to identify areas where further interventions are needed in an effort to improve the overall quality of our institutions MR keeping. Moreover studies looking at the effect omissions have on patient quality of care over time could identify which areas have the most significant effects on quality of care. This information could have the potential to streamline the implementation of suggested standards. In conclusion, intern documentation in medical records is suboptimal and can be improved with education. Consideration should be given to active education in this area at the commencement of internship.

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Attitudes of Hospital Healthcare Workers towards Influenza Vaccination in a Tertiary Hospital Setting

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Abstract
The rate of uptake of seasonal influenza vaccination worldwide by healthcare workers (HCWs) has been suboptimal. Nationally, uptake among hospital HCWs was less than 20%% prior to 2014. Indeed in our hospital following the 2010/2011 influenza season, a significant number of staff chose to have their vaccinations after the usual campaign period. The Occupational Health Department (OHD) undertook a questionnaire survey to determine the reason(s) for their late presentation. This was not anonymised, with a 21.7% participation rate (119 replied out of 548). We found 86(72.3%) HCWs believed influenza to be a serious illness, 84(70.6%) wanted to protect their family members and friends, and 64(53.8%) their patients from the infection. Nevertheless, 77(64.7%) were influenced by the recent media attention on the H1N1 influenza pandemic. We conclude external factors such as the arrival of the H1N1 pandemic continue to play an important role in influencing HCWs' attitudes towards receiving the vaccine.

Introduction

The OHD in Beaumont Hospital, comprising two doctors and three nurses, conducts annual influenza vaccination programmes for all staff during the peak influenza months of October and November. This programme is facilitated by the delivery of vaccines in the department (during week days and certain evenings to accommodate the evening shift) including the use of 'mobile carts' to areas where staff normally congregate. Vaccine delivery is according to procedures outlined in the department's policy document prepared by the consultant, and includes obtaining consent and information on health benefits and side effects. We also endeavour to find ways to educate and motivate staff, such as the novel use of screen savers and posters of well-known hospital personnel. Numbers of uptake each season are recorded and compared to previous years. These results along with current efforts to promote vaccination would also be reviewed periodically at staff meetings, presented to heads of departments (including infection control) and at grand rounds. More recently, vaccination uptake results for each department were distributed to all managers to encourage 'friendly competition'. Despite these measures, influenza vaccination uptake by HCWs remains suboptimal, including the 2010 campaign. Indeed, a significant number of staff chose to have their vaccinations after the usual campaign period i.e. from late December 2010 up to January 2011. The main trigger for this late uptake was thought to be the recent increase in H1N1 infections as highlighted by the media.[1] Reports of influenza outbreaks amongst patients were also noted during this period, but no increased absenteeism levels amongst HCWs. We undertook a questionnaire survey of all HCWs who presented late to determine their reason(s) for this, and took the opportunity to evaluate our current efforts in promoting the programme.

Methods

In April 2011, the names and demographics of staff who presented late were identified from our records. A questionnaire

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was attached to each pay slip, along with a pre-addressed return envelope and covering letter. An incentive (draw for a shopping voucher) to participate was also offered (see Table 2 on how staff rate the effectiveness of this approach). Of note there were no significant financial constraints in the OHD's ability to deliver the vaccine; seasonal influenza vaccine is provided free for all HCWs by the HSE. The first part of the survey included the participant's demographics i.e. name, age occupation and gender. Secondly, the participants were asked to choose from the suggested reasons for not receiving the vaccination during the October-November period. Next, HCWs were to indicate their reasons for finally getting vaccinated, and in addition their opinion on the most effective mean(s) for vaccine promotion. The results were collated after four weeks into Excel and analysed manually.

Table 1 Common reasons cited by HCWs for not receiving the vaccine and why vaccinations were finally obtained; 'convinced' against 'unconvinced' groups

Why did you not receive the influenza vaccination during our annual influenza campaign in October-November 2010?	Number of responses
I planned to but did not get the time to attend	59 (49.6%)
I missed the mobile cart when it was brought to my department	47 (40.0%)
I was concerned about getting side-effects	28 (23.5%)
I had side-effects from previous vaccinations	17 (14.3%)
I was not aware the current vaccine covered both the seasonal and H1N1 (swine) flu strain	14 (11.8%)

What was the reason for you finally getting vaccinated?	'convinced' group	'unconvinced' group	Total response	Z-score*
I believe influenza is a serious illness	27 (22.7%)	59 (49.6%)	86 (72.3%)	3.72 (P=0.0001)
I wanted to protect my family/friends from the flu	27 (22.7%)	57 (47.9%)	84 (70.6%)	3.52 (P=0.0002)
The recent increase in H1N1 flu infections as heard in the media	24 (20.2%)	53 (44.5%)	77 (64.7%)	3.56 (P=0.0002)
I believe in the effectiveness of the vaccine	20 (16.8%)	55 (46.2%)	75 (63.1%)	4.57 (P<0.00001)
I wanted to protect the patients from the flu	20 (16.8%)	44 (37.0%)	64 (53.8%)	3.24 (P=0.0006)

* Differences between the two groups for each reason were calculated using Single Sample Hypothesis z-testing, and a P≤0.05 was considered statistically significant

Results

From a total of 548 questionnaires, there were 119 replies, a participation rate of 21.7%. The highest responses to the first question i.e. reasons for not getting vaccinated initially, and the second question i.e. reasons for finally availing of the vaccine are shown in Table 1. The results (Table 1) demonstrate that although a significant number of HCWs appeared to have intentions to avail of the vaccine, they did not do so due to either time constraints (in 49.6% of cases) or practical issues like missing the mobile cart when it was brought to their various departments (40.0%). Following these reasons were HCWs' concerns regarding side-effects (23.5%) and perceived side-effects from previous vaccinations (14.3%). Table 1 also indicate the reasons for staff members finally availing of the vaccine. The majority stated that they believe influenza to be a serious illness (72.3%), that they wanted to protect their family members, friends (70.6%), and patients (53.8%) from the infection. Importantly, the recent media attention on the H1N1 also appeared to have influenced their decisions (64.7%). In addition, 53.8% of workers believed the vaccine to be effective.

It can be reasonably inferred from the responses that there were two categories of HCWs with regards to their attitudes towards the influenza vaccine: one group who were 'convinced' of the vaccine's effectiveness, and did not get vaccinated either due to a lack of awareness of the campaign, or practical issues i.e. vaccine unavailability during time of attendance, time constraints and missing the mobile cart; the second group who appeared to be 'unconvinced' on the effectiveness of the vaccine, nor its safety profile. As such we believe it was important to evaluate the responses of the second 'unconvinced' group which could indicate true underlying attitudes towards influenza vaccination. This group could be inferred from those who clearly stated that neither a lack of awareness nor practical issues were reasons for not availing of the vaccine. The responses of this group were analysed, and the results and the pattern matches that of the total percentage responses as seen in Table 1. Moreover the responses to which of the current efforts were most effective in each of the participant's opinion are shown in Table 2.

Table 2 HCWs' responses on how they rate current efforts by the OHD to promote influenza vaccination in the hospital

Current efforts	Responses
Mobile carts to our work areas	79 (66.4%)
Education sessions informing us of the health benefits and risks	63 (52.9%)
Posters highlighting times of vaccine delivery	52 (43.7%)
Encouragement/support from our managers/consultants	45 (37.8%)
Use of screen savers as reminders	44 (37.0%)
Information leaflets	35 (29.4%)
Use of incentives like the 'Time Out' chocolate bar	16 (13.4%)

Discussion

HCWs are at increased risk of seasonal influenza infection compared to the general population. It is estimated that at least 20% of HCWs are infected with influenza annually, and many continue to work despite being ill, increasing the risk to their patients and colleagues.[2] Worldwide, the rates of uptake of influenza vaccine among HCWs are suboptimal; 36% according to the CDC, and unvaccinated HCWs can be a key cause of outbreaks in health care settings.[3] The overall uptake by HCWs in Irish hospitals was 24.4% for the 2013-2014 campaign, an increase from 17.4% in the previous season.[4] In the UK, 45.6% of frontline HCWs received the influenza vaccine during the 2012/2013 season.[5] The higher UK figures may be due to a heavier promotional campaign, so called 'flu fighter' campaign which has successfully been embedded into the NHS. In certain states in the U.S., controversial mandatory seasonal influenza vaccination policies have been implemented for HCWs, where uptake figures of 88% and 98% have been recorded.[6,7]

A previous study highlighted the need of multifaceted education programmes[8] which are more likely to achieve sustained and significant improvements over single interventions. These include health promotion strategies such as the use of screen savers, [9] mobile carts,[10,11] and encouragement from professional peers.[12] Nevertheless, it appears certain external factors which attract media attention may also play a part.[13] Hence, when a significant number of HCWs chose to forego the annual influenza campaign and instead presented late following a media campaign which focussed attention on the H1N1 pandemic, we took the opportunity to investigate this further. The results show that although a significant number of HCWs seemed to have intentions to avail of the vaccine, they did not do so due to either time constraints or practical issues like missing the mobile cart. It can be surmised that these HCWs were 'convinced' on the efficacy of the vaccine and its safety profile. As for the reasons for HCWs finally availing of the vaccine, although the majority stated that they believed influenza to be a serious illness and they wanted to protect others from the infection, the media attention on the H1N1 pandemic also influenced their decisions. The responses of the 'unconvinced' group appear to correspond to the same reasons as above.

Thus it may be concluded that the arrival of the H1N1 influenza pandemic had a significant effect on HCWs' attitudes towards receiving the vaccine, probably by appealing to their altruism in terms of protecting others. Participants rated the use of the mobile cart as the most effective mode of vaccine delivery, followed by education sessions and the use of posters. Suggestions were given on how the OHD could improve vaccination delivery, including advice regarding times of delivery, and request for more information on side effects. In summary, despite persistent efforts by the OHD to try motivating and educating staff on influenza vaccination, it appears external factors specifically media influence also play a significant role in HCWs' attitudes towards getting vaccinated. Perhaps this study highlights the need to explore HCWs' attitudes towards 'mandatory' influenza vaccination programmes in the European setting, which have been successfully applied in certain centres in the U.S.

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AMAU Patient and Carer Satisfaction Survey

Sir

We present a Survey conducted to assess Patients and their Carer's AMAU Experience, at Kerry General Hospital, this survey is first of its kind to be carried out in the country. AMAU is the gateway to the hospital for acutely ill medical patients. A patient's stay in the unit is limited, usually around 6 hours. The National Acute Medical Programme has set standards for the workings of an AMAU across the country to ensure high quality standardized care to the satisfaction of the patients in particular and public in general. We conducted a survey to study the satisfaction with the service provided at KGH, A pre-set questionnaire from the National Acute Medical Programme was handed to 50 consecutive patients and 50 Carers, at the end of AMAU visit. Each questionnaire consisted of questions, which addressed various aspects from triage to discharge, including promptness of access, the availability of information, cleanliness and facilities, medical and nursing care and overall experience, the participants chose between Excellent, Good, Fair, Poor, for each question that best described their judgement.

The promptness of services was rated excellent by 84% patients and 74% carers, good by 14% carers and 3.4% patients, fair by 10% patients and 10% carers, poor by 2% carers. The verbal information was rated excellent by 94% patients and 88% carers, good by 6% patients and 6% carers, fair by 6% carers. The written information was rated excellent by 66% patients and 52% carers, good by 8% patients and 10% carers, poor by 2% patients and 2% carers.24% patients and 36% carers had no written information provided to them. The cleanliness was rated excellent by 84% patients and 66% carers, good by 16% patients and 32% carers, fair by 2% carers. The facilities were rated excellent by 62% patients and 68% carers, good by 28% patients and 28% carers, fair by 6% patients and 2% carers,2% patients gave an invalid response to this question and 2% of the carers left the question unanswered. The Nursing care was rated excellent by 100% patients and 94% carers, good by 6% carers. The Medical Care was rated excellent by 94% patients and 84% carers, good by 6% patients and 12% carers, fair by 4% carers. The overall experience was rated excellent by 78% patients and 98% carers, good by 20% patients and 2 % carers, fair by 2% patients.

The survey showed that the overall experience was satisfying as 78% of the patients and 98% of the carers rated it as excellent. The highest satisfaction rate was with the nursing staff reflecting the high quality of leadership at Nursing level and continuity of care. The area of lowest satisfaction was unavailability of written information, we recommend the information process in the AMAU be standardised, patients should be informed clearly through either written or verbal route clearly describing their expected activities throughout the visit. The 2010 Report of the National Acute Medicine Programme[1] stipulated that mechanisms such as patient satisfaction surveys should be used to capture the experience of patients, families and carers.

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Acknowledgements
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The Association Between Food and Exercise Induced Anaphylaxis

Sir

Exercise induced anaphylaxis (EIA) and its subtype food dependent (FD)- EIA are uncommon and easily missed forms of allergy. Exercise induced anaphylaxis (EIA) is a unique form of physical allergy characterised by rapid onset of generalised urticaria and occasionally complicated by respiratory compromise and/or cardiovascular collapse during or shortly after exercise. The first case report was published in 1979 by Maultiz et al. EIA has since been described in association with the use of medications (such as aspirin and non steroidal drugs, which may also cause spontaneous urticaria and angioedema), and with premenstrual hormonal change.[1] A variant of EIA that is perhaps more common in clinical allergy practice is anaphylaxis triggered by exercise soon after ingestion of food allergens. A clinical scenario emerged whereby patients would develop EIA following the intake of specific foodstuffs. This disease is now termed FD-EIA.

The first case report which described an association with shellfish of FD-EIA associated with wheat. Since then , further foods have been implicated in causing FD-EIA, including nuts (hazelnuts, almonds, peanuts and pistachio), vegetables (celery, onions, tomatoes, maize, matsutake mushroom, lentils and chickpeas), fruits (pomegranate, grapefruit, apples, oranges, grapes and peaches) and some other type of food (snails, cuttlefish, tofu, egg, cow's milk and poppy seeds).[2] Clinical records from a tertiary referral adult allergy clinic and training centre in London (Guys and St Thomas Hospital) suggest that 3-5 cases of EIA fit the definition of FD- EIA every month. The few epidemiological studies that are available to date show a female predominance with a mean presentation age of 37.[3] In the acute settings, the emergency management of FD-EIA is the same as that for any Ig E- mediated systemic anaphylactic reaction. The cornerstone of successful longer term management of FD-EIA are first to recognise the problem and second to educate the patient. Avoidance of culprit foods, preferably with the help of specialist advice from an allergy dietician, teaching the patient to recognise symptoms, to terminate exercise when necessary and to self manage systemic episodes with adrenaline if necessary are crucial.[4,5]

Allergy as a specialty does not exist in Ireland to a level that an effective service is provided to patients in a consistent and equitable fashion. Therefore increasing the awareness of the presence of FD-EIA is crucial as this condition can lead to life threatening situations if not recognised early.

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Tamoxifen and Potent CYP2D6 Inhibitors: A Potentially Lethal Interaction

Sir

Tamoxifen has a well-established role in the management of oestrogen-receptor positive breast cancer halving the 5-year recurrence risk of early stage breast cancer, reducing mortality and controlling metastasis. It is an inactive pro-drug which is activated by the hepatic cytochrome P450 system. The most important of metabolites are 4-hydroxytamoxifen and 4-hydroxy-N-desmethyltamoxifen (endoxifen). Both metabolites have a 100-fold greater affinity for the oestrogen receptor compared to tamoxifen[1]. Endoxifen is the most pharmacologically active metabolite. This conversion is by cytochrome P450 isoenzyme 2D6 (CYP2D6). The CYP2D6 gene located on chromosome 22 is highly polymorphic with more than 80 different major alleles identified. Many alleles confer decreased or absent CYP2D6 activity[2]. Reduced activity leads to lower endoxifen concentrations, increased risk of breast cancer recurrence and a shorter time to cancer relapse. Although conflicting data exist, these studies suggest an important role for CYP2D6 activity in tamoxifen metabolism. Co-administration of tamoxifen with medications that inhibit the activity of CYP2D6 can reduce endoxifen formation reducing tamoxifen effectiveness. This has major implications for clinical practice. Up to 25% of breast cancer patients experience clinically significant depression. CYP2D6 inhibitors selective serotonin reuptake inhibitor (SSRI) and norepinephrine reuptake inhibitor (SNRI) antidepressants are used as initial therapies. They are also used to treat tamoxifen-associated hot flushes. The potent SSRI's paroxetine and fluoxetine have a significant effect on tamoxifen metabolism. Paroxetine is the only SSRI that exhibits "suicide" inhibition with irreversible loss of enzyme function[1]. Sertraline and citalopram are moderate inhibitors of CYP2D6. Venlafaxine escitalopram and mirtazepine are considered to have little or no inhibition of CYP2D6[1].

A retrospective investigation of the long-term impact of CYP2D6 inhibitors on clinical outcomes in 24,430 women treated for breast cancer with tamoxifen over a 13-year period, reported that 30% received at least one concomitant antidepressant. Paroxetine was most commonly prescribed (25%)[2]. Breast cancer related death rates were significantly higher in women in this cohort. This risk was directly proportional to the duration of co-prescribing. Such studies have resulted in recommendations to avoid potent CYP2D6-inhibiting antidepressants in patients receiving tamoxifen. Despite this, records from a community pharmacy database of three million people in the Netherlands demonstrated that paroxetine remains one of the most frequently prescribed antidepressants in women receiving tamoxifen. Prescribing trends matched those of the general population[3]. An Irish study utilising the Primary Care Reimbursement Services pharmacy database, identified 4526 women commenced on tamoxifen between2001 and 2006[4]. Thirteen percent (n=599) were co-prescribed tamoxifen with moderate (6.9%) or potent (7.6%) CYP2D6 inhibitors. In 5.8% of patients, the CYP2D6 inhibitor was started after tamoxifen.

While more recent co-prescription rates have fallen, we remain concerned about the lack of awareness of this interaction. Paroxetine and fluoxetine co-administration with tamoxifen should be avoided. Preference should be given to antidepressants that show little or no inhibition of CYP2D6 such as venlafaxine and escitalopram[2]. When the use of a potent CYP2D6 inhibitor is considered necessary, co-administration should be limited to the shortest possible duration.

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Lack of National Consensus for the Molecular Investigation of Myeloproliferative Neoplasms

Sir

The discovery of the JAK2 V617F mutation ten years ago revolutionised the molecular diagnosis of the classical myeloproliferative neoplasms (MPN) of polycythaemia vera, essential thrombocythaemia and primary myelofibrosis with presence of this mutation now considered a major criteria for the diagnosis of these malignancies according to the World Health Organization classification of tumours.[1] Despite these advances, current guidelines maintain the requirement for bone marrow aspirate and biopsy necessary for assessment of morphology and degree of fibrosis critical for therapeutic decisions. While presence or absence of this mutation is beneficial in differentiating between a reactive haematological response (causes include infection, inflammation, tissue damage, hyposplenism, haemorrhage, iron deficiency, malignancy, haemolysis and drug therapy) and a clonal MPN, testing for the JAK2 V617F mutation is becoming an advance test in the initial work up of patients for whom the aforementioned secondary causes have not been fully excluded. The year upon year increase in requests for JAK2 V617F mutation status, despite consistency in the annual number of newly diagnosed MPN patients, has been previously documented.[2]

To assess the reasons for this increase in JAK2 V617F mutation analyses, an audit was performed on diagnostic requests from a facility for molecular testing that serves the Republic of Ireland, received between January 2006 and October 2014 inclusive. JAK2 V617F requests were analysed according to the requesting clinician/team, all of whom were from hospital Haematology departments. Requesting clinician/teams were excluded if the number of requests was less than 50 in the audit period to eliminate those with smaller practices that would not routinely request JAK2 V617F mutation analysis. A total of 8094 requests were received from 35 clinician/teams with the "hit-rate" calculated as the percentage of JAK2 V617F positive cases identified divided by the overall number of requests. The mutation detection methodology was unchanged throughout the audit period. The median number of requests from all clinician/teams was 193 (range 57-530) with a median "hit-rate" of 19.2%. Conspicuously, a wide range in the individual clinician/team "hit-rate" was evident, ranging from 11.2% to 41.0% (Figure 1). Of note, 4 clinician/teams (20, 23, 25 and 34) were responsible for greater than 25% of all requests, all of whom had "hit-rates" lower than the median (18.2%, 16.8%, 16.5% and 11.3% respectively).

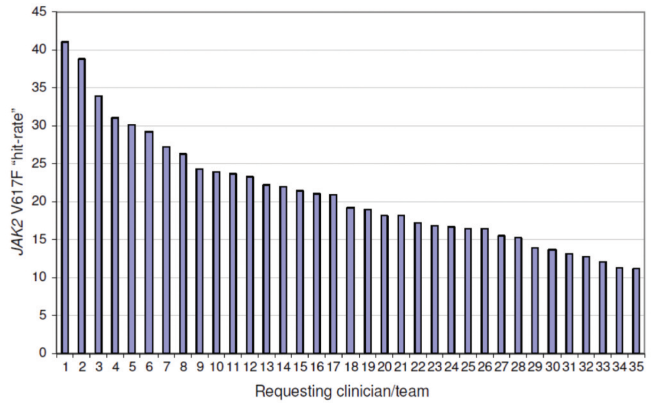

Figure 1 Variation in requesting JAK2 V617F analysis

Clearly, indications for JAK2 V617F screening vary significantly among requesting clinician/teams implying no national consensus approach to JAK2 V617F testing. Several reasons may be responsible and include non-adherence to, or unfamiliarity with, current guidelines, and ambiguity in certain clinical scenarios such as unexplained thrombosis other than splanchnic vein thrombosis, and specialization in different areas of haematological practice. Findings are to be disseminated to all clinician/teams with further audits scheduled to reassess requesting patterns. This brief but informative audit highlights the difficulties in implementing diagnostic guidelines, acknowledged to influence subsequent treatment approaches,[3] and emphasises the need for education and adoption of consensus guidelines for the systematic investigation of a suspected MPN in the context of the discovery of new genetic markers of these diseases.[4]

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Diagnosing and Treating Common Problems in Paediatrics

Authors: Michael B O'Neill, Michelle Mary McEvoy, and Alf J Nicholson
ISBN-13: 978-1908911902
Price: €70

The teaching of undergraduate students and trainee doctors in Paediatrics has changed. This textbook by O'Neill, McEvoy, and Nicholson reflects the new challenges of delivering high quality clinical care to children. For most of the twentieth century, medical education was based on Abraham Flexner's 1910 Medical Report. In his document Flexner set down that medical students should spend a number of years studying basic science followed by a similar period undergoing clinical training. Flexner's framework put medical practice on a new, sound footing. While this formula has served medical practice well, it was didactic and tended to be inflexible. In the latter part of the 20th and the beginning of the 21st century the concepts of evidence based medicine, empathy, and competency were introduced. The format used by the authors O'Neill and colleagues embrace these new ideals.

The book concentrates on the common conditions encountered in general paediatrics. The contents page reads like the 'who's who' of any children's ED department. Its default position is the undifferentiated baby or child with a presenting symptom that has caused alarm or concern to the parent. There are 32 chapters. Ten chapters deal acute conditions such as a child with a fever, vomiting, abdominal pain diarrhoea, seizures, wheezing, pallor, a limp, an acute rash, and diabetes mellitus. The other chapters deal with subacute and chronic disorders. Among the many problems addressed are infants with excessive crying, failure to thrive, enuresis, developmental delay, and ADH. A common feature throughout the text is the use and description of assessment scales in the clinical evaluation of the child. The authors continually emphasise the importance of structure when evaluating a presenting symptom. At the end of each chapter there is a revision MCQ that aids in the reinforcement of the key points.

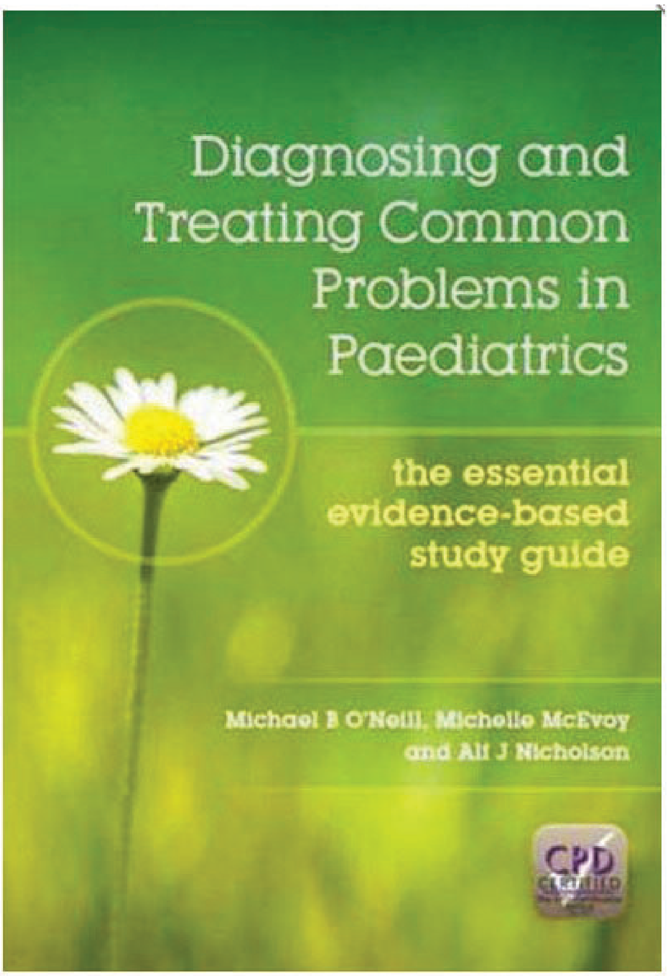
I sampled the chapter on the child with a fever, a daily problem for GPs and paediatricians. It begins by pointing out the importance of red flags in the symptom history and examination including altered level of consciousness, respiratory distress, signs of shock, seizures, petechial rash. There is a practical discussion of the merits and demerits of oral and tympanic temperature measurements compared with that taken rectally. The importance of the heart rate and its interpretation is strongly made. It is pointed out that the risk of serious bacterial infection is age dependent, being 25% for under 2 weeks, 13% under 4 weeks, and 8% at 4-8 weeks. The reader is warned about the common pitfalls in the examination of the febrile child.

A chapter is devoted to the child with developmental delay, a common and worrying problem affecting at least 5% of children. The authors emphasise the importance of familiarity with normal development and again an awareness of red flags. These flags include not smiling at 10 weeks, poor head control at 3 months, persistent primary reflexes at 6 months, not sitting at 12 months, not walking at 18 months. The organized approach is very helpful for the inexperienced doctor who may find it a daunting task.

There is a separate radiology section (on disc) compiled by Stephanie Ryan, Radiologist. It consists of a clear set of images of common conditions. It is a valuable resource for the practicing Paediatrician and the trainee preparing for the membership.

This textbook contains a wealth of practical knowledge. Its content can be readily transferred to the cotside when dealing with a sick child. The vast clinical experience of the authors shines through, and guides the reader through the intricacies of the medical care of sick children. I highly recommend it for medical students, GPs and Paediatricians.

JFA Murphy
Editor



Continuing Professional Development

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

The Budget Impact of Hepatitis C Treatment in Ireland 2001-2012

J Kieran, K Bennett, M Coghlan, C Bergin, M Barry. Ir Med J. 2015; 108: 166-9.

Question 1

The number of patients initiated on treatment for HCV was:

a) 2300
b) 2310
c) 2320
d) 2330
e) 2340

Question 2

The amount of money spent on anti-viral therapy was

a) €21.5m
b) €22.5m
c) €23.5m
d) €24.5m
e) €25.5m

Question 3

The amount spent on haematological growth factor was

a) €1.0m
b) €1.5m
c) €2.0m
d) €2.5m
e) €3.0m

Question 4

The average cost per patient initiated on HCV treatment was

a) €11,771
b) €12,771
c) €13,771
d) €14,771
e) €15,771

Question 5

The number of patients treated with EPO was

a) 212
b) 222
c) 232
d) 242
e) 252

The Silver Surfer: Trends of Internet Usage in the Over 65 and the Potential Health Benefits

K Edwards, RM Duffy, BD Kelly. Ir Med J. 2015; 108: 171-4.

Question 1

The number of individuals involved in the study was

a) 1306
b) 1406
c) 1506
d) 1606
e) 1706

Question 2

The rate of internet use in the over 65s in 2002 was

a) 4.3%
b) 5.3%
c) 6.3%
d) 7.3%
e) 8.3%

Question 3

The rate of internet use in the over 65s in 2010 was

a) 23.1%
b) 24.1%
c) 25.1%
d) 26.1%
e) 27.1%

Question 4

Among those with good subjective general health the rate of internet use was

a) 18%
b) 19%
c) 20%
d) 21%
e) 22%

Question 5

Among those with poor subjective general health the rate of internet use was

a) 5.1%
b) 6.1%
c) 7.1%
d) 8.1%
e) 9.1%

A Series of Oral Lesions Presenting to an Otolaryngology Department

SU Khan, TE O Connor, IJ Keogh. Ir Med J. 2015; 108: 177-9.

Question 1

The total number of patients in the study was

a) 102
b) 103
c) 104
d) 105
e) 106

Question 2

The number of benign lesions was

a) 92
b) 93
c) 94
d) 95
e) 96

Question 3

The number of malignant lesions was

a) 9
b) 10
c) 11
d) 12
e) 13

Question 4

The number of patients with cancer of the tongue was

a) 7
b) 8
c) 9
d) 10
e) 11

Question 5

Among the patients with oral cancer the number who smoked cigarettes was

a) 2
b) 3
c) 4
d) 5
e) 6

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