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WJMER

World Journal of Medical Education and Research

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- Systematic Literature Review: Do Socio-economic Barriers Exist in British Medical School Admissions?
- An Argument to Integrate Social Media into Professionalism Training in Undergraduate Medical Education
- How Can the Efficacy of Acupuncture be Assessed in Improving Chronic Pain?
- I Sing the Body Electric: a Historical Perspective of Cardiopulmonary Resuscitation

What do nurses expect from newly qualified doctors?

The Management of Transient Loss of Consciousness (TLOC) in Adults and Young Adults

Training in cosmetic and reconstructive gynaecology

Basic Principles of Electrosurgery and Energized Dissection: Monopolar, Bipolar and beyond

A qualitative evaluation study on the perception and operation of Deprivation of Liberty Safeguards in Old Age Psychiatry teams in Rhondda Cynon Taff and Bridgend in Mid Glamorgan, South Wales

Introduction

The World Journal of Medical Education and Research (WJMER) (ISSN 2052-1715) is an online publication of the Doctors Academy Group of Educational Establishments. Published on a quarterly basis, the aim of the journal is to promote academia and research amongst members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from around the world. The principal objective of this journal is to encourage the aforementioned, from developing countries in particular, to publish their work. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings. We envisage an incessant stream of information flowing along the channels that WJMER will create and that a surfeit of ideas will be gleaned from this process. We look forward to sharing these experiences with our readers in our editions. We are honoured to welcome you to WJMER.

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WELCOME

We are delighted to bring you the sixth edition of the World Journal of Medical Education and Research (WJMER). This edition, similar to the previous editions, has an excellent spread of articles that includes topics on medical education, clinical reviews, educational pieces and career options.

Our opening article by Mr Desilva-Abeysinghe explores the socio-economic disparity of undergraduate medical school admissions in Britain. The next article by Mr Darbyshire provides a compelling argument to integrate social media into training the undergraduate medical students.

Following these thought provoking educational pieces, Dr Niestrata-Ortiz discusses how the efficacy of acupuncture can be evaluated in the treatment of chronic pain. Mr Adami from the University of Pisa, Italy, provides a very interesting narrative about the historical perspective of cardiopulmonary resuscitation. Dr Gawne and colleagues report on a study that ascertains if the observations and expectations of nurses about newly qualified doctors reflect the standard set by the General Medical Council, United Kingdom.

Moving on to clinical practice, Dr Thiru and Dr Poulson provide the results of an audit that evaluated the management of transient loss of consciousness in adults at the Royal Liverpool University Hospital. Information on a career in cosmetic and reconstructive gynaecology or the training structure of this speciality is seldom available in standard medical career books, and Dr Farquharson and Dr Sircar provide a fascinating insight into this area.

The penultimate article dissects the principle behind a perhaps indispensable medical equipment that is used in thousands of operating theatres all over the world on a daily basis. One of the fundamental requirement and essential aspect in any operation is the needed for a robust and reliable haemostasis. As such, electrosurgery in the form of diathermy is an integral part in modern surgery. Mr Rupasinghe and colleagues discuss the basic principles of electrosurgery and energized dissection that gives the reader a sound overview in a succinct yet informative manner on this topic.

The final article in this edition addresses a very important social and medical issue of our times: The decision-making capacity of patients suffering from mental incapacity living in residential homes or hospitals may be further undermined by inappropriate deprivation of their liberty. Dr Gray reports on the results on an important qualitative evaluation study on the perception and operation of 'Deprivation of Liberty Safeguards' in Old Age Psychiatry teams in Rhondda Cynon Taff and Bridgend in Mid Glamorgan, South Wales.

We hope that you find all the articles in this edition, which addresses a variety of topics, enlightening, stimulating and enjoyable to read.

With very best wishes,

Ms Karen Au-Yeung
Editor

Dr Ahmed Hankir
Associate Editor

Ms Laura Derbyshire
Associate Editor

Professor Stuart Enoch
Editor-in-Chief

Table of Contents

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World Journal of Medical Education and Research:
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WJMER

Systematic Literature Review: Do Socio-economic Barriers Exist in British Medical School Admissions?

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Keywords:

Medical school admissions; Socio-economic barriers; UCAT; Inequality; Social classes

Abstract

The objective of this literature review is to explore the socio-economic disparity of undergraduate medical school admissions in Britain. The methods of snowball sampling, sifting (primary and secondary) and Boolean operators were employed in the Medline database to conduct the search.

This literature review provides a brief overview on the socio-economic barriers to medical school entry in the United Kingdom, which continues to play a key role in shaping the demographics of the population entering medical school. The presence of the UKCAT promotes a competitive disadvantage to those from lower socio-economic backgrounds and the presence of anti-academic values strengthens existing barriers.

Broadening participation promotes diversification and may enable medical students to develop global health competency skills. One of the main issues we have identified in this review is that those from non-traditional academic backgrounds encounter barriers such as a lack of orientation and integration issues.

Introduction

Prior to gaining admission into a medical school in London, I experienced first-hand how intense the competition was to secure entry. Having successfully obtained my place, it has struck me that the vast majority of my peers come from highly reputable private schools and are generally situated at the higher end of the socio-economic spectrum.

By conducting this literature review I would like to identify and evaluate factors which play a key role in gaining entry to medical school and to subsequently if equalities exist.

Planning

The following steps were employed when conducting this review:

1. Identification of relevant articles
2. Critically appraising the chosen articles
3. Collating evidence and constructing a conclusion

Initially I utilised the ECLIPSE framework, enabling me to fragment the key question into various terms aiding the generation of ideas within the sphere of medical school admissions:

Expectations: identify normal intakes of medical students and observe any trends in socio-economic status, ethnic background and other factors.

Client group: past, and present undergraduate MBBS (Bachelor of medicine, Bachelor of surgery) students.

Location: Britain (applicants applying via UCAS (University and College Admission Services) to MBBS programme).

Impact of current system: inequality in access to undertake an MBBS degree.

Professionals involved: admissions staff across universities teachers.

Service goal: ensure fairer admissions policies so as to broaden participation.

Pre-assessment

By conjuring ideas from the ECLIPSE model, a pre-assessment to define the scope of the topic was conducted.

After doing an initial search by combining 'medical school admission' and 'widening access to medical school' in the Medline database, a large number of papers were collated.

Initially sifting through these papers highlighted recurrent theme based on the link between socioeconomic status and medical school entry, enabling me to hone and develop my question.

Methods

Developing the question

Mathers J. et al[1] carried out a cross sectional analysis on 30,654 UK medical students enrolled into traditional courses between 2002-2006. The data are summarised in figure 1.

Several themes are apparent. The numbers are unequal in terms of sex with 60% females and 40% males. Does this suggest that it is more advantageous to be a female when applying or are fewer males applying?

For universities offering traditional MBBS courses, multicultural diversity exists. Most strikingly, the numbers of South Asians (Pakistan, Bangladeshi and Indian) who have successfully entered medical school in the given period are around 15%, and these specific minority ethnic groups make up approximately 3.6% of the UK population according to 2001 census data (whereas most other ethnicities have a comparatively lower success rate for their given population). These figures suggest that ethnicity may have a role in successful admissions, although socio-economic class may be a confounding factor as there may be more middle class South-Asians than African-Caribbean individuals for instance.

The last critical factor observed from the table and forming the basis of my literature review, are the socio-economic backgrounds of those successful applicants. Most significantly, around two thirds of those enrolling, originate from a parental occupation within the 'higher and lower managerial professional' bracket.

	Traditional courses		
	All universities (n=30 654)	Established universities (n=28 136)	New universities (n=2518)
Sex:			
Male	12 311 (40)	11 286 (40)	1025 (41)
Female	18 343 (60)	16 850 (60)	1493 (59)
Age (years):			
Mean	19.2	19.0	21.5
Median (IQR)	18 (18-19)	18 (18-19)	19 (19-23)
Range	17-51	17-51	17-51
Ethnicity*:			
White	21 415 (70)	19 459 (69)	1956 (78)
Mixed	971 (3)	890 (3)	81 (3)
Other	519 (2)	486 (2)	33 (1)
Black Caribbean	86 (0.3)	80 (0.28)	6 (0.24)
Black African	602 (12)	536 (2)	66 (3)
Black other	33 (0.1)	29 (0.10)	4 (0.16)
Pakistani	1342 (4)	1252 (4)	90 (4)
Bangladeshi	288 (1)	268 (1)	20 (1)
Indian	2917 (10)	2778 (10)	139 (6)
Chinese	720 (2)	704 (3)	16 (1)
Other Asian	1265 (4)	1199 (4)	66 (3)
Not known	496 (2)	455 (2)	41 (2)
Parental occupation:			
Higher managerial-professional	12 528 (41)	11 715 (42)	813 (32)
Lower managerial- professional	7615 (25)	6934 (25)	681 (27)
Intermediate occupations	2949 (10)	2677 (10)	272 (11)
Lower supervisory-technical	576 (2)	533 (2)	43 (2)
Routine occupations†	522 (2)	478 (2)	44 (2)
Semiroutine occupations‡	1730 (6)	1573 (6)	157 (6)
Small employers-own account workers	1227 (4)	1123 (4)	104 (4)
Not stated	3507 (11)	3103 (11)	404 (16)

***Figure 1**: 'Characteristics of students admitted to medical degree programmes, 2002-6[1]'*

Mathers J. et al[1] stated that anonymised data obtained from UCAS was adjudged to be 100% accurate and counted students who had a UK postcode supporting a high study quality. One limitation of this paper is that within the results, a large number was unaccounted for as 'not stated', which could compromise the internal validity of the paper. This retrospective cohort study had over 3500 participants who did not state their parental occupation. This could be due to the stigma associated with the job, or it could be attributed to unemployment or retirement.

However the detailed study design and large sample size, increases the study quality, which is further validated by utilising other literature in the field.

Inclusion and exclusion criteria

Following this, I decided to implement and combine the following three terms: *medical schools, socioeconomic factors, and admission***.** (See appendix).

Using 'Medline', a hundred and forty results were obtained from preliminary sifting. Thirty-four papers were found to be relevant by evaluating the abstracts (secondary sifting).

Having a set inclusion and exclusion criteria, enabled justification in selecting relevant articles. The inclusion criteria encompassed papers, and the entry programme to medical school had to be traditional MBBS, (as graduate entry schemes were not highly researched). Fundamentally the review centered on admissions into medical schools in the UK.

Exclusion criteria were papers not published in English and countries outside the United Kingdom, as the entry to medical school globally is not in a standardised format. Papers older than ten years were excluded because up to date information was needed.

Discussion

To further evaluate the question, other studies were reviewed in detail. Seyan et al[2], a retrospective study highlighted the existence of socio-economic inequalities in medical school admissions. Figure 2 below summarises their findings:

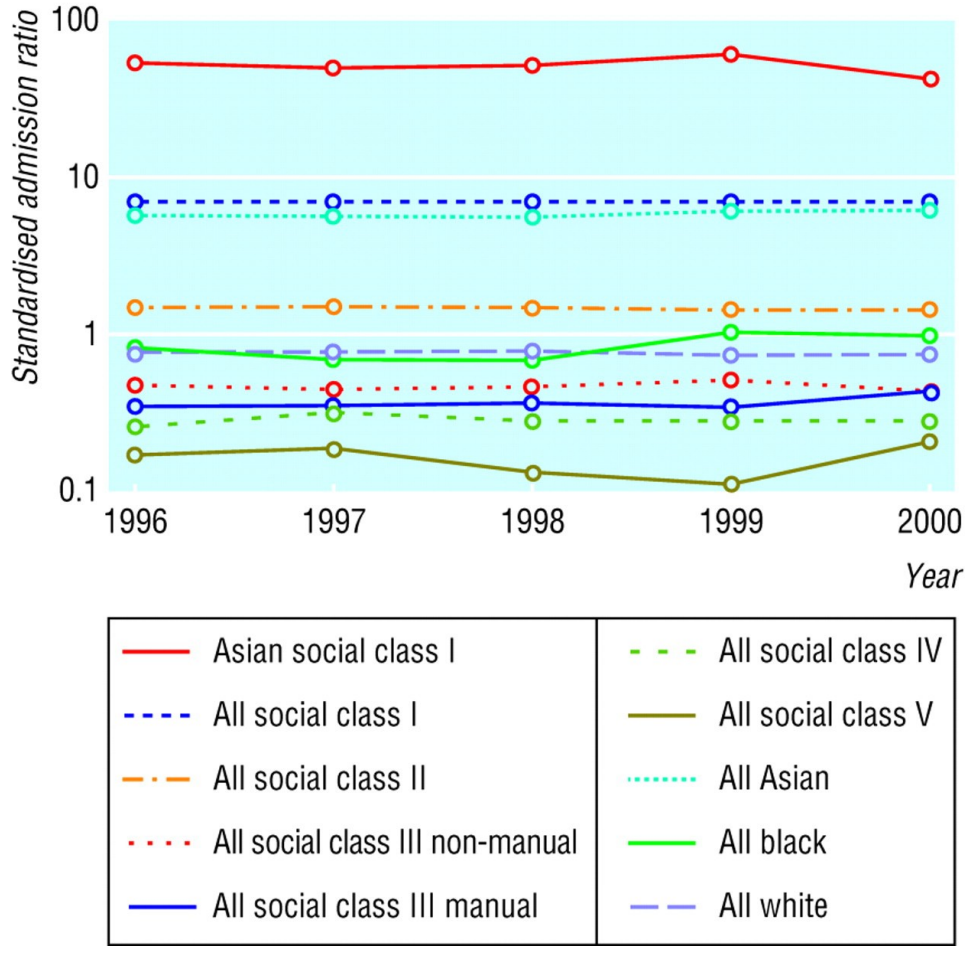

Figure 2: *'Standardised admission ratios by social class and ethnicity for UK medical school admissions 1996-2000 (log scale)[2]'*

Combining ethnicity and social class, there is a 600-fold discrepancy from the most underrepresented 0.07 (black people from social class 4) and the most overrepresented 41.73 (Asians from social class 1).

Furthermore, white and black students from the highest social class were consistently around 100 times more likely to complete successful admission compared with those from social classes IV and V, over the five year period.

The graphical representation clearly demonstrates a large disparity between the social classes. Statistical reliability is assumed due to the large sample size used, however the outcome measure uses a 'standardised admissions ratio' which is a composite index, thus questioning the credibility of the results. This term is briefly defined in the paper, however the numerator is rather vague and the denominator is devised from entirely different data meaning that the figures produced are not entirely reliable.

McManus[3] describes the presence of a meritocracy since 1945 in Britain. The meritocracy acts as an indicator for exam performance and subsequently impacts admissions. Unsurprisingly those who are from higher classes are over-represented in medical school presumably because they are able to pay the fees for education in better schools. Figure 3 emphasizes that medical school admission for social class IV and V has continually remained relatively low.

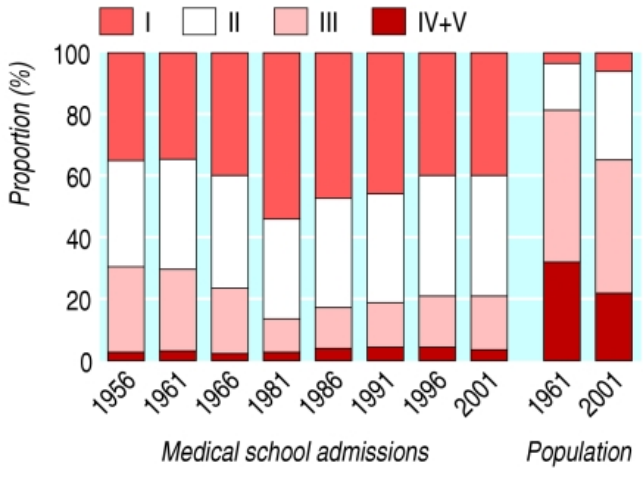

***Figure 3**: 'Proportion of UK medical students in social classes I, II, III, IV and V, from 1956 to 2001 compared with population proportions for 1961 and 2001[3]'*

The retrospective nature of the study illustrates the historical constancy in medical school admissions enabling the rigid 'meritocracy' to be observed and highlights the potential need for a change in policy, for instance, setting a quota system for each socio-economic class. The data acquisition and actual figures for social class are not specified thus questions the study's quality. However it highlights the theme of socio-economic differences by graphical representation.

In the current situation for medical education in the UK, fees are increasing and widening participation is a key target for the British government.

The UKCAT (UK Clinical Aptitude Test) is a further financial burden (starting from £65 per exam) and competitive disadvantage to students from lower socio-economic classes.

The BMAT (bio medical admissions test) is another costly entrance exam for Oxbridge, Imperial and UCL medical programs. Whilst the BMAT is a proven source of admissions information, it contributes to further intimidation and economic barriers for state school applicants. Further identification of implications surrounding the BMAT would have been helpful to advance this literature review.

The UKCAT can prove valuable if it enables the overcoming of the private school attendants who invariably have additional facilitation in their medical school applications. However the UKCAT has virtually no evidenced based approach and many doubt that this unpiloted test counters the middle class bias[5]. The UKCAT consortium maintains that all universities utilize the test as part of a 'well rounded admissions policy'.

The aforementioned studies, whilst raising key questions, fail to provide quantifiable evidence to see the effect of admissions before and during UKCAT examinations on applicant diversity. Prospective studies would have been more informative in this instance, as opposed to the assumptions being made about the nature of the UKCAT. The external validity cannot be verified as statistics are not present and more research into the area is required.

Utilisation of snowball sampling from Cassidy's paper lead me to a focus group study by Greenhalgh et al[6], which focused on perceptions of 68 students from a diverse range of ethnic and socio-economic backgrounds.

Greenhalgh et al[6] used the Jarmen score as a measure of social deprivation and qualitative interviews were employed to obtain responses. Marked differences in perceptions between socio-economic backgrounds were observed. Those in the lower socio-economic strata associated their cultural-identity to anti-academic values and those pupils from a working class background saw medicine as unreal and financially constraining. It was often found that individuals from lower socio-economic backgrounds were usually first time choosers with no

family tradition, as opposed to the embedded medical student, having parents as active participants, as well as possessing diverse sources of both formal and informal information regarding the application process.

This observational study is well presented with a comprehensive range of sources. Utilisation of a focus group may have lead to external validity issues with generalisations being made. However adequate details regarding subject recruitment, outcome measures and relevant questionnaire were all specified in the paper methodology. Questions do remain over the small number of participants in the study, thus results may not be entirely generalizable.

The aforementioned papers all illustrate socio-economic inequalities, but how can diversity increase on enrolment into medical school?

From the search results on Ovid, we obtained papers relevant to widening participation schemes.

Initiatives to widen participation at medical school have been deployed. The UK's flagship program: Extended Medical Degree Programme (EMDP) at Kings College London, recruits able pupils from low achieving state schools in inner city London.

Figure 4, illustrates the diversity when comparing socio-economic class between MBBS and EMDP students.

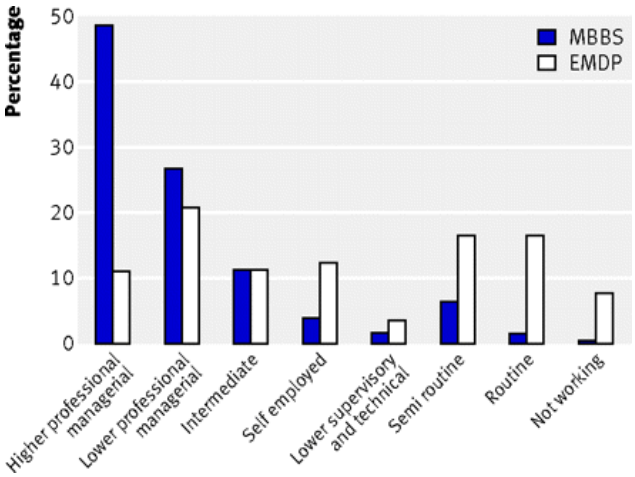

Figure 4: *'Socioeconomic classification of King's College London medical students 2002-6[7]'*

Around 40% of successful candidates on the EMDP scheme come from a lower socio-economic status as illustrated by parental occupation *i.e.* 'semi-routine, routine and not working'. Conversely, over 40% alone on the MBBS course, have parental occupation classified in the 'higher professional managerial' bracket.

The quantifiable depiction of comparing both traditional and EMDP schemes adds valuable knowledge to this field of literature. Detailed interpretation of graphs and interviews via a pragmatic approach gives the paper a good credibility rating. Results are clearly presented and the discussion does not deviate too far beyond what is depicted in the study.

Socio-economic diversity is being encouraged via courses such as EMDP, but do these non-archetypal individuals overcome barriers, such as adapting to the reality of the middle class medical vocation?

Ball et al[8] highlight via qualitative methods the various dimensions behind a 'contingent chooser' and an 'embedded chooser'. In addition to this, the study underlines the metamorphosis of becoming a medical student, which leads to masking of sub-cultural identities.

Relating to, and reinforcing this idea, Brown et al[9] depict how non-traditional learners acclimatise to medical school. On interviewing EMDP students this paper suggests that there was a feeling of a class divide and an element of snobbery conveyed from those on the traditional MBBS course highlighting the need for effective pastoral care.

The qualitative methods (interviews) identified in these observational studies, could provide biased opinions, as those branded as EMDP students, may have already felt stigmatized leading to a questionable internal validity of the papers. The study designs are sensible as they encourage perceptions to be evoked in real life circumstances, however Brown 2007 may have a source of bias as it is complied by directors of the EMDP scheme rather than objective interviewers hence encompassing an element of unaccounted reflexivity (researcher bias). The results are also discussed with reference to other valid literature in the field, which consolidates the papers findings.

Conclusion

This literature review details socio-economic barriers to medical school entry, which continues to play a large role in shaping the demographics entering medical school.

The UKCAT presents financial barriers as well as enabling those in private schools to have a competitive advantage as the school's expertise and ambition is geared towards sending their students to medical school.

Some of those from a lower socio-economic status, whilst having a competitive disadvantage also tend to link their cultural identity to anti-academic values. Negative perceptions, and various contextual dimensions all strengthen barriers to entry.

Widening participation schemes enables further diversification at medical college, but with the proposed increase in tuition fees, the objective of providing culturally sensitive healthcare is diminishing and socio-economic barriers will continue to exist and solidify.

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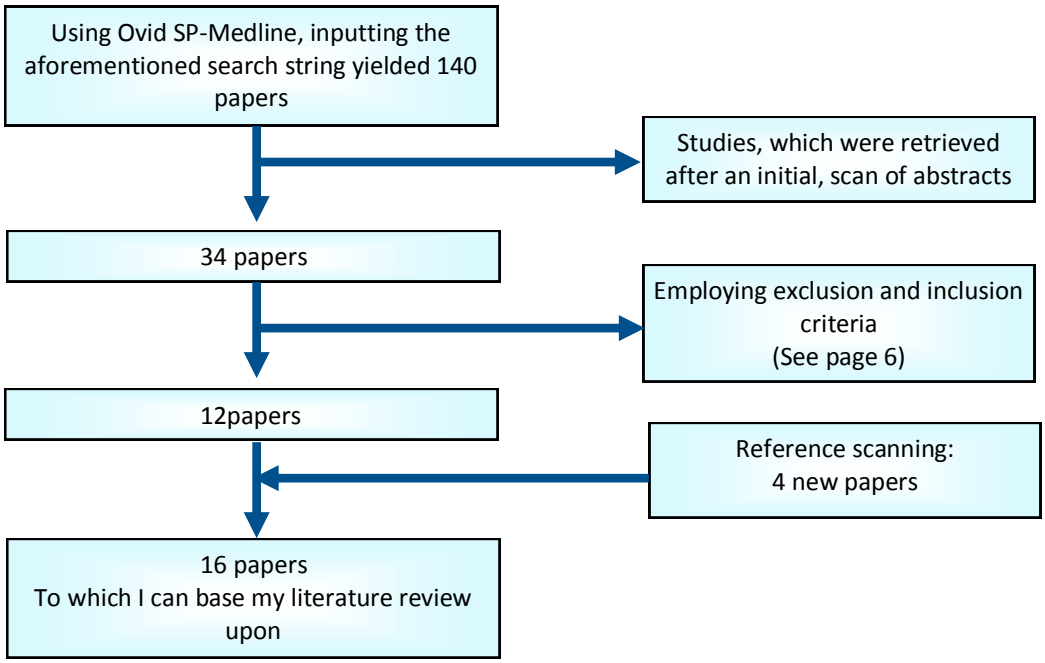
Appendix

Search Thread: [Ovid SP- MEDLINE]:
After conduction an initial pre-assessment and developing my question, the following search string was used in Ovid SP-Medline database:

1. exp. Medical schools (included all subheadings)
2. exp. Socioeconomic factors (included all subheadings)
3. 1 or 2
4. 1 and 2
5. admissions (included all subheadings)
6. 4 and 5

Using ‘The Pubmed database’ I obtained 109 results but via preliminary sifting (observing the titles of the articles), hardly any of these results were of relevance.
Using ‘Medline’ I obtained 140 results. 34 papers were found to be relevant by evaluating the abstracts (secondary sifting), thus providing justification for the usage of the ‘Medline’ database in this literature review.
Exploding terms helped broaden my search. The aforementioned inclusion and exclusion criteras was then implemented, yielding 12 suitable papers to base my literature review upon. Reference scanning later on in the process helped discover a further 4 papers which I could critically review.

Summary of Search strategy



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An Argument to Integrate Social Media into Professionalism Training in Undergraduate Medical Education

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Keywords:
Social media, Facebook, Twitter, Doctors, Professionalism

Contextualising Professionalism in the Social Media Setting

Social media usage is growing[1]. Certain elements are pertinent to individual medical practitioners and the wider profession. Practicing within this evolving societal context presents challenges to doctors' professionalism. This can be avoided by choosing not to engage with Facebook or Twitter, for example, but the potential benefits of engaging for patients and practitioners means that many are already choosing to contribute.

Professionalism is contextual, with different meanings between different professions[2] and even within professions geographically[3] and institutionally[4]. These cultural differences are important to consider when discussing professionalism in the wider context and when designing professionalism curricula[5, 6]. Professionalism is far from static, a historical perspective can often be helpful in understanding the developmental trajectory and underlying motivators for professionalism as a concept[7].

So if professionalism is, to some degree at least, locality and profession specific, how can we create a working definition and learning outcomes for medical practice in a global digital environment such as Twitter? Two approaches to answering this question are applied:

- Review of the literature on professionalism internationally for commonalities in the definition used.
- Analysis of professionalism discourses internationally for common themes with review of the available professional guidance.

Despite differences in cultural dimensions that contextualise the society within which professionalism is defined geographically[8,9], research on essential attributes of professionalism found that 4 key areas (personal characteristics, relationships with patients, workplace practices and relationships and socially responsible behaviour) held true internationally[3]. It is of note that these attributes are found consistently if a historical view on professionalism discourse is taken[10]. Several attributes were identified with variable levels of necessity geographically[3] and a selection of these (*i.e.* being accessible to patients, acting in a responsible fashion towards society and being adaptable to changes in the workplace) may be especially pertinent to professionalism in the social media context.

Social Media and Medicine

There is a small but growing body of literature on professionalism in social media, much of it is descriptive in nature. The articles tend to have a certain pattern in content with a discussion around the wider dangers of social media to various professions, a descriptive account of professionalism lapses by medical practitioners, advice for institutions or individual practitioners and finally a discussion of the potential benefits of social media[11-14]. A further article covers these areas and also discusses the topic in the context of free speech in the USA[15].

Other work is more specific in nature discussing, for example, the interplay between professionalism and humour in medicine in the context of comedy videos posted on YouTube by medical students[16].

Work from Washington D.C. looked at the postings on the social networking platform Twitter (called Tweets) from 260 users who self-identified as physicians in their online profile. Of the 5156 tweets analysed 49% were health or medical related with 3% of these being deemed unprofessional in some way by the researchers. Reasons included; potential patient privacy violations, profanity, sexually explicit material and discriminatory statements. Of those responsible for the privacy violations 92% of offending physicians were easily identifiable by the information on their profile[17].

A study conducted in 2007 found that the majority of medical students at a single US school had high levels of familiarity and usage of a variety of social media platforms[18]. A similar study from New Zealand, concentrating on Facebook and conducted in 2010, showed similarly high levels of participation[19]. If the growth in usage amongst entrants to medical school reflects that of the wider developed world we can safely assume that almost all our current first year medical students have some kind of social media presence[1]. Another study from the USA found high proportions of students to have Facebook accounts[20]; a reply to this article predicted an increase and called for professional guidance[21].

Despite individual studies having various weaknesses such as selection bias[17, 19, 22], small sample sizes [18] and all being conducted in developed English speaking countries these studies provide good evidence for a direction of travel mirroring that of society as a whole, the integration of the Internet and social media in our personal and professional lives. There are potential benefits, but potential pitfalls to maintaining a professional practice also exist. This has become clear to numerous regulatory bodies across the developed world and has dictated the need for professional guidance. This guidance is a useful framework on which to build a curriculum.

Professional Guidelines

The draft guidelines from the General Medial Council, UK [23] reflect the published work discussed above. As a draft for a regulatory framework the document is not practical as to how to use social media professionally, but it does provide clarity on what is not acceptable. One statement from this document best summarises all of the guidance internationally and is worth repeating:

"*The standards expected of doctors do not change because they are communicating through social media rather than face to face or through other traditional media. However social media does raise new circumstances to which the established principles apply*."

This is reflected in guidance from Australia and New Zealand[24], Canada[25] and the USA[26]. As this is new guidance in these countries it is perhaps not surprising that a search of developing countries regulatory bodies' websites did not yield any guidance.

From the evidence and guidance above two separate guides by professional bodies in the UK have been produced[27, 28]. These guides are helpful references for students learning about social media professionalism and offer practical advice on applying the guidance from statutory bodies.

Working Definition and Learning Outcomes

Within my context, practicing in the UK, the definition of professionalism from the GMC is particularly relevant, for their definition of a 'good doctor' is what defines professionalism; the rest of their guidance simply applies these principles in a variety of situations:

"Good doctors make the care of their patients their first concern: they are competent, keep their knowledge and skills up to date, establish and maintain good relationships with patients and colleagues, are honest and trustworthy, and act with integrity."[29]

So if my definition of professionalism does not change for this context what does that mean for developing learning outcomes? Applying the ethical principles and professional guidance of existing professionalism curricula to this new context, thereby concentrating on applied ethics[30] and focusing on the four key aspects discussed above[3]. Alongside this, learning outcomes focusing on the specific hazards of social media are included, though it is recognised that the rapid pace of technology means that this will be quickly out of date, hence the importance of the underlying principles. Taking these principles and applying a combination of Bloom's taxonomy[31], Miller's pyramid[32] and more specifically Norcini's adaptation; the following learning objectives are postulated[33]:

- Apply the principles of Good Medical Practice to their social medical interactions
- Identify professionalism lapses online
- Define the potential benefits of doctors engaging with social media for patients
- Apply confidentiality settings online, maintaining an awareness that they are inherently fallible
- Develop an awareness that information posted online is permanent
- Respond to requests from patients for contact via social media in an appropriate manner
- Respond to colleagues' breaches of confidentially via social media appropriately
- Interact with colleagues via social media in an appropriate way

Integrating Social Media into a Pre-existing Undergraduate Professionalism Curriculum

The working definition of the formal curriculum used herein is "the stated, intended and formally offered and endorsed curriculum"[34] within the context of a pre-existing professionalism education programme in an undergraduate medical education context in the United Kingdom. It cannot be assumed that all medical schools offer curricular content on professionalism, but the General Medical Council has stated that this should be the case[35].

Instruction in professionalism necessitates alignment with the stance that professionalism is, to some degree at least, acquired rather than inherent. This aligns with recent work applying psychological constructs to philosophical assumptions of professionalism[36] and how the student develops disparate entities, or domains of professionalism, into a functioning professional possessing "practical wisdom"[37].

The inclusion of social media within, or alongside, an existing professionalism curriculum reflects the realities of professionalism as a dynamic concept[38]. The content and techniques used in its instruction must not be set in stone. Any faculty proposing to deliver the content must recognise that technology moves rapidly and the curriculum must be flexible enough to cope with this. Technology is also fickle and while Facebook and Twitter are popular today they may suffer the decline that has befallen other enterprises such as MySpace[39]. Educators may have to shelve obsolete teaching endeavours shortly after their implementation.

Teaching

Providing teaching on professionalism and social media within the social media space may help embed the theoretical knowledge alongside the practical application of the medium, essentially applying situated learning theory[40], but runs the risk of isolating those not yet experienced and confident with the technology[41].

The argument for integrating social media professionalism within an existing professionalism course is a strong one. Evidence suggests that medical students begin the process of developing their professional identity early in the course[42] and that it occurs at a variable rate through the curriculum[43]. Therefore placing educational interventions at the end of the course, for example, is nonsensical. This may not be possible in the postgraduate setting, but that is not the focus of this essay.

Learning opportunities that provide students with the chance "to engage in active sense-making activities" may help foster a deeper understanding of professionalism[4]. So learning tasks that encourage a combination of practical application and reflection should prove more effective than didactic instruction.

The teaching of professionalism should be shared by all those involved in the education of doctors[44, 45], but this may be difficult in the social media context. The proportion of more senior doctors who have engaged with the medium is considerably lower than students and junior doctors[46]. This does raise the possibility of near-pear teaching as a strategy, something that is accepted by students in the broader sense[47], has many potential benefits[48] and in certain circumstances seems to be just as effective as faculty-led teaching[49, 50]. Peer tutors have been used in the setting of teaching clinical skills[50, 51], as problem based learning co-tutors[52] and in electrocardiogram interpretation education[53] with success. This concept of peer teaching can also be extended to peer assessment[54].

The first aspect of the curricular content is ensuring learners are aware of what is expected of them as developing professionals. The guidelines from statutory bodies[23] and more practical guides from professional associations[27, 28] contain the essence of this material. This could be delivered to students through lectures or by signposting to required reading[55, 56].

Providing opportunities for experiential learning[57], and bridging the gap between the professional guidance and the practical experience that experiential learning can provide is where the real learning is likely to occur. This blurs the boundary between the hidden and informal curriculum and may be one way of bringing the two closer together[58, 59].

Small group learning sessions are a method that has been used for broader professionalism education. An example is a tutor-facilitated session whereby the group are introduced to some examples of professionalism lapses on social media by healthcare professionals. They would then discuss and reflect on their own online presence. Finally they would be asked to apply the relevant professional guidelines. This basic framework could be fit into a variety of curricula. The professionalism lapses could be fed into a problem based learning scenario[61], however this is not always easy to achieve[62].

The use of reflection and reflective writing in numerous guises including blogging[63, 64], learning portfolios[65, 66] and student narratives[67] seems to help shape students' professionalism[68]. The features of these methods that engender successful pedagogy are not clear, but they all share encouragement of creativity[69, 70] and engagement[71]. It may be that the use of the various social media in question could facilitate the process of

The environment within which it would be placed would have to be secure, *i.e*. an internal network rather than the wider Internet.

By using social media in a professional context students can apply and then reflect upon the realities of remaining professional. Social media has been used positively in several different ways including rebutting erroneous media health scares[72], helping those with mental health problems and social isolation[73] and running a Twitter Journal Club[74]. As part of a group learning task students could be asked to plan and implement something similar and reflect on the process.

As a guide figure 1 maps (seen in the next page) maps the teaching sessions discussed above to the learning objectives outlined in the first section. Mapping the curriculum within a complex, multi-site, multi-institute spiral curriculum is a complicated task, but this map can act as an initial guide.

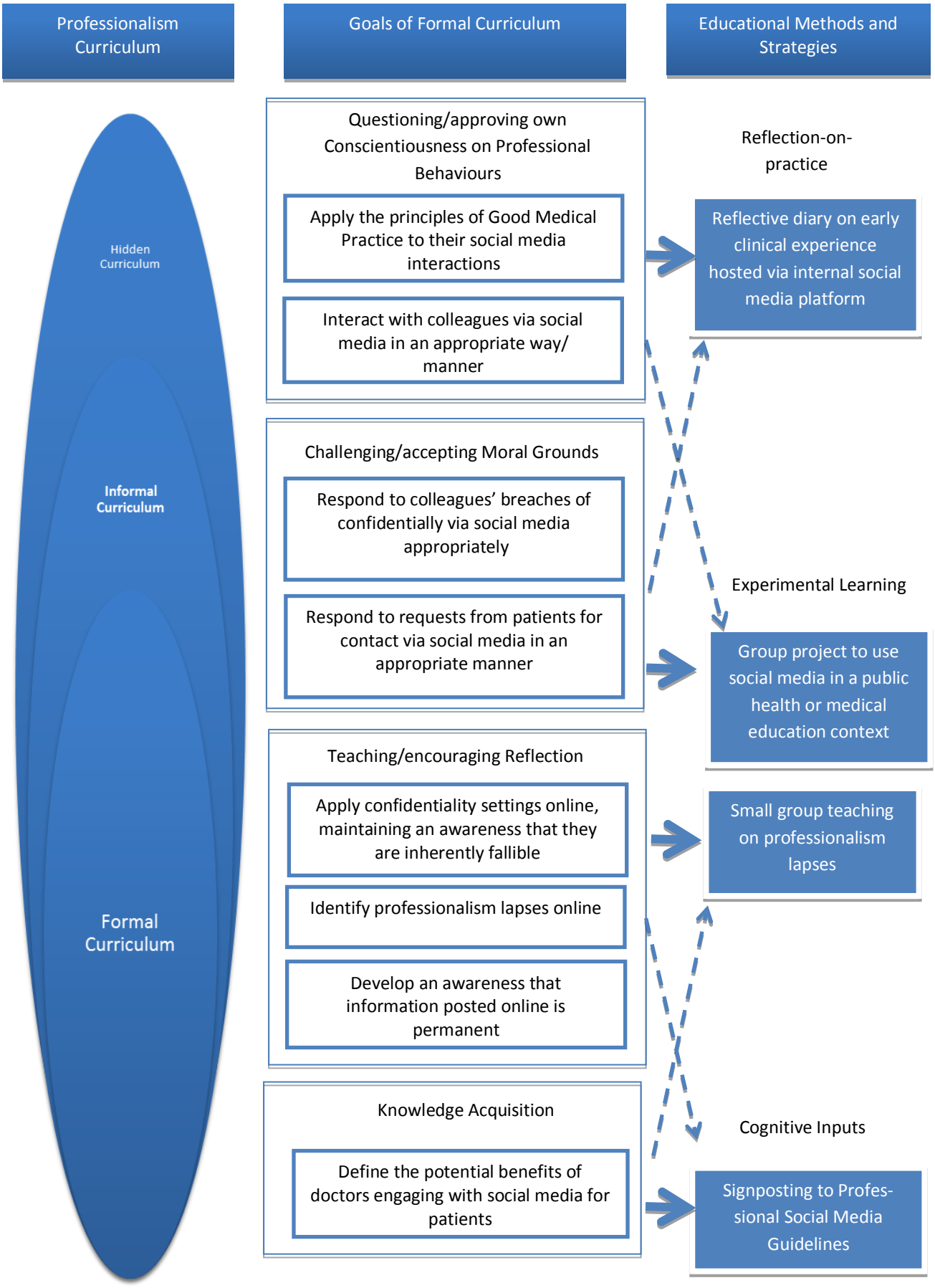

Figure 1: *Teaching methods mapped to learning outcomes*

These processes could help facilitate the unguided journey of self-discovery that I have experienced developing and maintaining my professionalism online. For me I have relied on a combination of trial and error, common sense and learning from other's mistakes. I now feel reasonably secure interacting online but I have made mistakes along the way. The novelty of the environment and the initial small audience have meant that these mistakes have been without repercussion. For doctors entering the arena now, or on a larger scale students well accustomed to social media having to modify their behaviour as they develop professionally, mistakes are less likely to go unnoticed or unpunished. This is very much reminiscent of, in a much-compacted way, the development of concepts and practices of professionalism in medicine generally.

Assessment

Society demands professionalism from its doctors, with professionalism now forming the core of clinical competence. It is increasingly being assessed with equal weight as medical knowledge and clinical skills[75, 76]. Assessing professionalism validates it as important and for a variety of reasons encourages students to engage in learning on the subject[77]. Including social media recognises the changing scope of modern medical practice.

Taking the decision that someone is or is not professional is a difficult one. Taking multiple pieces of evidence collated from a variety of sources is the current best method of determining this[6]. While this is in part due to different methods assessing different aspects of professionalism, the inherent weakness of most of the assessment methods means that no single method can be relied upon[78].

There is also the dichotomy between assessing professionalism attitudes and behaviours. There are multiple observational tools to assess students' behaviour[76, 79-82] and these have been used as a proxy for students' attitudes. However it is likely that observed behaviour is a poor proxy for attitudes, particularly when external constraints such as the pressure of being observed or examined is in place[83]. This may lead to the danger of 'faking it students' passing assessments and students with positive attitudes failing due to a solitary slip[83]. This brings us back to the importance of on-going professionalism assessment[6].

Including social media in professionalism assessment need not increase the burden of assessment, integrating it within an existing system of professionalism assessment is a practical solution. Potential methods of doing this could be:

- Including social media contacts in multisource feedback exercises or having a specific multisource feedback for the social media presence.
- Including online activity in inventories such as the poly-professionalism inventory II[84] and the conscientiousness index[85, 86]. Such tools may have a role for peer assessment of professionalism[87].
- Including social media interactions in learning portfolios[65, 88].

These assessment methods are mapped to the learning objectives identified in figure 2.

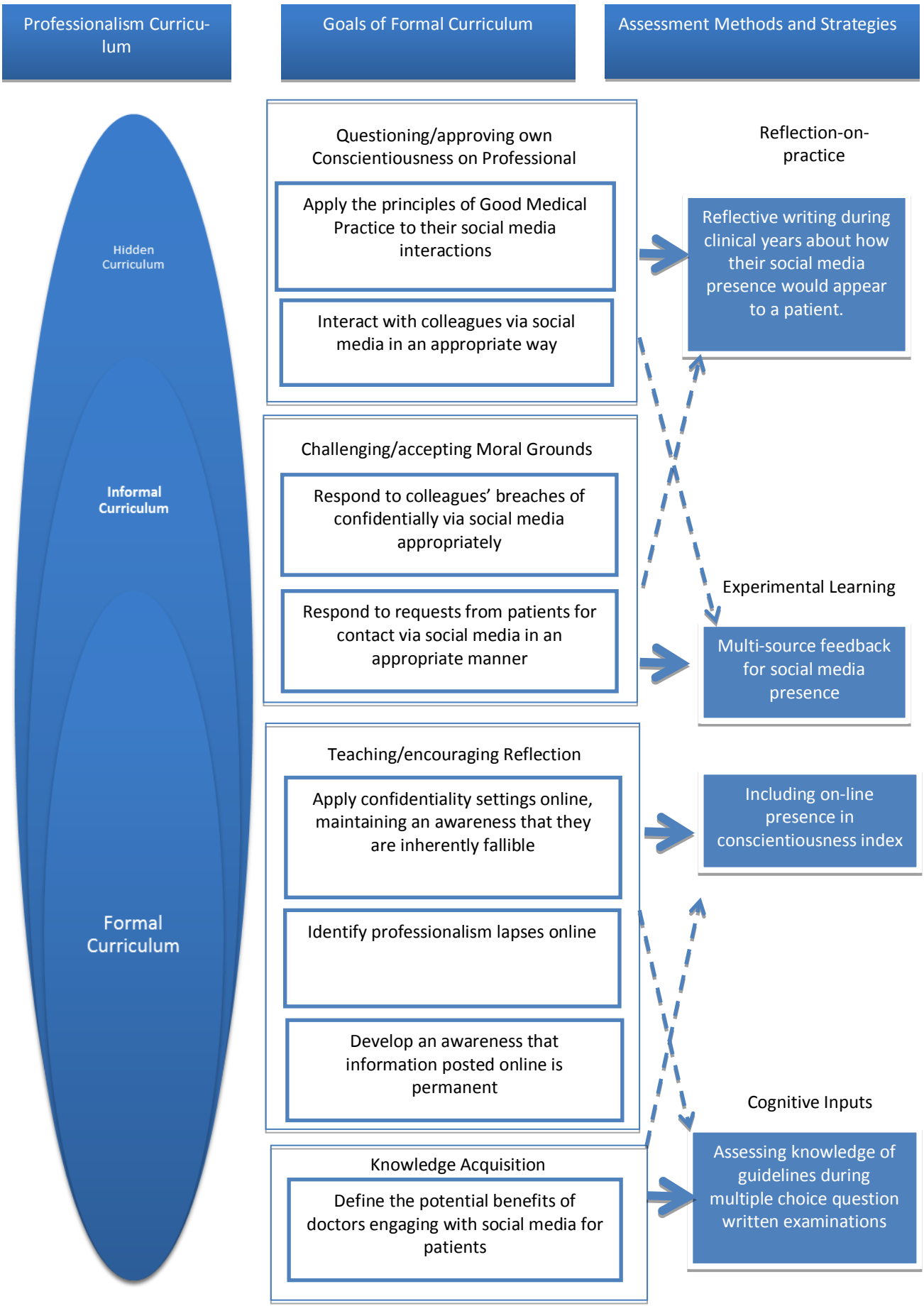

***Figure 2**: Mapping Learning Outcomes and Assessment*

The interactions that occur within social media can be described as being strongly placed within the informal curriculum, especially if emphasis is given to terms such as "unscripted"[34] and "opportunistic"[89] and the setting being "nonclinical"[89] or "outside formally identified learning environments"[34]. It is also about interaction between healthcare providers and trainees[89] and particularly the "interpersonal" nature of such interactions[34] are reflected in the central tenants of the informal curriculum: role modelling and socialisation.

Role Modelling

If doctors are to engage online then they not only have to think about how they appear to their patients and the general public, but also to their students. It could be argued that all students and junior doctors that engage either actively or passively with doctors in the social media window are to a greater or lesser extent going to be influenced by their behaviour. If and how this occurs is really an unknown but there is no reason why it will not relate to the process that occurs during face-to-face interaction, which is so important for developing students' behaviours, values and attitudes[90]. Reflecting on this, as discussed above, may help move from "reflection and abstraction" into "translating insights into principles and action"[91].

How previously identified attributes of a positive role model[91, 92] apply online is dependent on a doctor's specific use of social media. Whether a doctor is trying to be a teacher, campaigner or commentator, demonstrating a sustained effort to be "as consistently good as we can be"[91] is likely to display some element of being a positive role model. The postulation that professionalism lapses by medical educators is the chief barrier to professionalism education[93] is perhaps relevant in this setting

Integrating this with my own experience, I would ask students to reflect on how their own behaviour online might reflect their role model status. A useful exercise for senior medical students might be for them to review their current social media accounts/pages/streams and write a short reflective piece on what a patient and a first year medical student might think upon seeing the content. This could form part of their reflective portfolio for either summative of formative assessment.

Socialisation

Social media can play several roles in the socialisation process of medical education. The possible engagement between junior and senior medical students, medical students and junior doctors, and between doctors and academics that would not normally interact has no immediately obvious negative. Doctors and medical students need networks of support, but these are not immediately available[94] especially when they need them most such as when dealing with death[95].

I have had social media conversations with many junior doctors, mainly via Twitter, to help them deal with a bad day/shift/event. There is nothing special about the platform on which the conversation takes place, merely having the conversation may be enough to move a stressful situation from unmanageable to one that the individual may cope with[96, 97]. These interactions may form the basis of an interesting discussion with students around dealing with stress and maintaining patient confidentiality when discussing work online.

The incremental identity transformation that occurs during medical education[98] can be observed in microcosm on social media. From college students trying to engage to get an edge in their application to medical school, through students of all stages of healthcare education to the editor of the BMJ and a former Chief Medical Officer; all of the stages of development of a healthcare professional can be conceptualised.

As discussed above, professionalism lapses do occur on social media formats. The nature of the specific acts differs from that found in undergraduate clinical care interactions in which consent[99], patient safety and dignity breaches, lack of disclosure about students' identity and student abuse[100] predominate[101]. The impact of observing others acting unprofessionally on social media as compared to observing doctors or peers unprofessional behaviour in the clinical setting is unknown. The depersonalisation associated with digital media may have some parallels to the depersonalisation of cadaveric material in the teaching of anatomy, something that is beginning to be utilised in early professionalism instruction[102-104].

The "vast network of unwritten social and cultural values, rules, assumptions and expectations"[89] of healthcare professional and student engagement in social media is likely to be as complex as it is offline[105, 106], though as of yet not as well studied.

An organisation's approach to social media represents one element of the hidden curriculum. Some hospitals and universities are actively engaging with patients, students and staff in a positive and managed fashion. The benefits and risks are not clearly delineated but it does represent an acceptance of the media and possible corporate advantage for early adopters[107, 108].

Social media is part of an institution's culture; even a decision not to engage in the media says something about that institution. My institution actively engages with Twitter but not Facebook, advertising jobs and

learning events via the medium. Local conferences often have their own Twitter hash tag so that delegates can post thoughts and questions. The importance of institutional culture to professionalism education is a central part of the informal and hidden curriculum. Recent work examining this from an ecological[109] and narrative approach[110] suggest that, while less than tangible, the complex multilevel and dynamic relationships can be altered to change overall institutional culture to one which is more able to foster professionalism development. Social media may play a part in this in the future.

Conclusion

I have argued for the inclusion of social media within professionalism education for undergraduate medical students by contextualising the issue of social media and medicine and professionalism. Taking this argument further I have outlined how this can be integrated into existing professionalism curricula.

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How Can the Efficacy of Acupuncture be Assessed in Improving Chronic Pain?

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Abstract
Acupuncture is a complex multi-methodological treatment approach, used for alleviation of a variety of complaints, including chronic pain. Due to the subjective nature of pain as well as the unique features of acupuncture, the double-blind placebo-controlled trials are impractical and often fail to reliably measure the range of responses to acupuncture in clinical practice. In order to evaluate the acupuncture treatment effects more accurately, it is important to assess the level of perceived dysfunction or pain, taking into account the individual variation as well as the systemic effects. Therefore, preferably, the assessment methods employed in acupuncture research should have proven utility in controlled trials and the statistical analysis tools ought to consider non-metric properties of the variable and the contribution of the individual's variation in the results. Furthermore, trial designs need to account for acupuncture's specifics and, hence, the pragmatic trials, enriched enrolment with randomised withdrawal, naturalistic protocols and/or observational studies including quality of life adjusted years analysis are more suited for the evaluation of acupuncture's effect than standard randomised controlled trials.

Introduction
Acupuncture means treatment with needles. It is a branch of medicine in which fine needles are inserted through the skin to a depth of a few millimeters or more, left in place, sometimes manipulated, and then withdrawn. It is used to treat a variety of conditions including pain. This treatment modality originated in China more than 2000 years ago, where it has been an integral part of medicine ever since. It may have developed independently in other parts of the world.

The modern history of Western acupuncture started in the 19th century. This approach, also called 'medical acupuncture' differs from the traditional Chinese philosophy in that it relies on scientific explanations of its mechanisms of action. The British Medical Acupuncture Society encourages the attempt to reinterpret acupuncture according to the conventional Western understanding of the anatomy and physiology. Therefore, in recent years there has been extensive research into acupuncture, which has confirmed its physiological effect revealing some of the mechanisms of action of needle stimulation. This has led to the development of various applications of acupuncture, such as myofascial trigger point stimulation for chronic pain.

The goal of current research is to provide scientific evidence for the effectiveness of acupuncture so that it can be formally integrated into the policy of any National Health Service provider. It is especially valuable due to acupuncture's potential to improve chronic pain, for the management of which other currently available therapies are often insufficient. However, due to the nature of acupuncture, the measurement of its efficacy by the conventional scientific method of double-blinded randomized control trials has proven limited. The aim of the present study is to determine the means by which acupuncture's effectiveness in improving chronic pain can be assessed.

Myofascial trigger point stimulation for improving chronic pain

Myofascial trigger point stimulation is a system for the diagnosis and treatment of myofascial pain syndromes, which adapted the needle technique from Chinese acupuncture, updating and enhancing it with anatomy and neurophysiology. Myofascial pain syndromes are chronic pain conditions occurring in the musculoskeletal system without any obvious injury or inflammation. They include, among others, headaches, low back pain, tennis elbow and trigeminal neuralgia. All these conditions are thought to be caused by distorted function and hypersensitivity in the peripheral nervous system – 'neuropathic pain'. Since the neuropathies almost invariably occur at the nerve root, they are often referred to as radiculopathies. They are characterized by the presence of tender points in affected myotomes, which lead to muscle shortening[1]. Stimulation of trigger points aims at decreasing the oversensitivity of the nerves involved, hence, releasing muscle shortening and reducing the pain.

The challenges of clinical research into the effectiveness of acupuncture in improving chronic pain

According to the current General Medical Council guidelines, all the medical practice in the United Kingdom has to be evidence based. Aiming for objectiveness, the efficacy of most treatment modalities is evaluated by means of double-blind randomized controlled trials, where a treatment in question is assessed against a placebo. One of the biggest problems in acupuncture research is lack of an ideal placebo for acupuncture needles. This is due to the fact that any potential placebo (called sham acupuncture), e.g. pressure with blunt needles, will be a form of physical stimulation, which will cause some degree of physiological response. Hence, no reliable comparison can be made between the effect of sham and real acupuncture. There is also considerable inter-practitioner variability in terms of techniques, accuracy of needling the accupressure points, choice of points and depth of needling, which poses another difficulty while assessing acupuncture's effectiveness.

Furthermore, due to the nature of acupuncture, it is difficult to ensure double blinding. Although patient blinding is possible during the treatment, the subsequent verification of its success has its limitations. This is because the best way to test blinding is to ask patients whether they think they had real or sham acupuncture, which may interfere with the effectiveness of the treatment being tested by causing the patient to doubt the therapy. In addition, it is hard to ensure practitioner blinding in an acupuncture trial. As a result, a 'placebo-controlled', double-blinded trial of acupuncture is technically impossible.

Another factor limiting clinical research in acupuncture in Britain is the lack of research resources. Unlike in pharmacological research, in acupuncture trials, no preliminary studies are undertaken to compare different types of acupuncture and find the most adequate type for any given patient. This can lead to provision of suboptimal acupuncture treatment, compromising clinical trials.

Finally, the principal challenge with regard to measuring the effectiveness of acupuncture in improving pain is its subjectivity. Pain is an individual multifactorial experience with a sensory as well as an affective component. Therefore, it cannot be assessed in isolation from the patient by means of any objective scientific tools[1].

Discussion

Accurate outcome measures are essential in order to provide the most suitable treatment for each patient. Therefore, they must be valid, reliable, specific and sensitive for the particular condition. Outcome measures are the crux for validation of any research and, hence, for a justifiable inclusion of a given therapy in the National Health Service policy. Recommendations for treatment are commonly based on results evaluating variation in systematic effects (group response) from randomized controlled trials without accounting for the individual patient's variation. In the evaluation of acupuncture-related treatment effects for conditions such as pain, the trial design and statistical analysis used are a challenge since the assessed variables commonly have subjective properties and are based on the person's self-report. Therefore, the preferable assessment methods used should have proven useful in controlled trials and the statistical analysis tools ought to consider non-metric properties of the variables such as pain as well as the contribution of the individual's variation in the result[2].

Due to the recognition of difficulties finding valid outcome measures for acupuncture and the need for determination of its evidence-based role in the treatment of certain illnesses, the German Federal Committee of Physicians and Health Insurers commenced special Model Projects on Acupuncture ('*Modellvorhaben Akupunktur*') in 2000 evaluating acupuncture's effectiveness. The project includes the largest clinical studies on acupuncture ever performed and has proven to be a tremendous achievement, laying the basis for reliable clinical research methods into acupuncture.

One of the most frequent complaints of patients referred for acupuncture is chronic pain. In order to successfully determine the effectiveness of acupuncture for its

improvement, it is vital to have reliable tools for the measurement of pain. It is now recognized that pain cannot be measured directly[2,3]. As a subjective, multidimensional experience, it needs to be judged from the patient's response. Its measurement ought to include pain intensity, frequency, relief-seeking behaviour and changes in function[3].

One of the well-recognized tools for assessing pain severity is McGill Pain Questionnaire which combines a patient's description of the pain with the perceived severity. Rating scales are a vastly used alternative to questionnaires. They include verbal, numerical and visual analogue scales. The response to treatment can also be measured by means of *Global assessment*, whereby the patient is asked to choose the most accurate description of the effect of treatment from the pre-prepared options. All the above methods, the questionnaires, rating scales and global assessment, can be potentially used before and after the treatment to assess its effect. They can also be applied at different time intervals to evaluate the long-term effects of acupuncture in chronic pain. Verbal scales may be less reliable due to possible variation in the interpretation of the adjectives used by individual patients. The numerical and visual analogue scales are both vastly used in clinical settings. However, the visual analogue scale (VAS) is a proper ratio scale which allows sensitive t-test and ANOVA methods to be used in the statistical data analysis[3].

This enables the identification of significant differences with relatively small sample sizes or small differences between groups, which is vital for measuring the effect of acupuncture treatment and, therefore, makes the visual analogue scale superior for this purpose.

The visual analogue scale, together with pain severity and frequency were used as primary outcome measures in the Acupuncture Randomised Trials conducted as part of the German special Model Projects on Acupuncture ('*Modellvorhaben Akupunktur*')[4]. The primary outcome measure for migraine and tension-headache was the difference in number of days with headache of moderate to severe intensity between 4 weeks before randomization (baseline phase) and weeks 9-12 after randomization. Responders were defined as those with a minimum of 50% reduction in frequency of moderate to severe headaches. The primary outcome for low back pain was the change of intensity by at least 50% from the baseline to the end of week 8 after randomization, as measured by the visual analogue scale. The trials confirmed effectiveness of acupuncture for migraines, tension-type headaches and low back pain[5].

Another component of pain assessment is recording relief-seeking behaviours. Measurable pain behaviours include e.g. use of analgesics and hot-water bottles and the amount of time spent resting during the day. They can be evaluated on the basis of patient records or clinician's observation. However, these methods are often not entirely reliable due to the variation in the severity of pain throughout the day, poor patient recollection, as well as the subjective and multifactorial nature of pain behaviours.

The final crucial aspect of pain assessment and, hence, treatment effect is functional change. It can be evaluated by examination or by patient questionnaires. Examination can assess the effect of acute acupuncture interventions, such as needling trigger points. However, for outcome measures in chronic pain, questionnaires are more valuable. They are designed to evaluate patients daily functioning before and after treatment. This includes the range of movements, ability to carry out daily activities, mood and sleep. In order to increase the sensitivity of these measurements, disease-specific functional questionnaires have been developed for different conditions that may be treated by acupuncture, e.g. neck pain, back pain, headache[3]. The disease specific questionnaires were employed in a number of Acupuncture Randomised Trials conducted as part of the '*Modellvorhaben Akupunktur*' project. The improvement from baseline in the Western Ontario and McMasters Universities Osteoarthritis Index (WOMAC) was used as the primary outcome measure of the efficacy of acupuncture in improving knee osteoarthritis pain. The responders were defined by a decrease of at least 50% in their WOMAC score and the trial proved acupuncture effective for improving chronic knee osteoarthritis pain[5]. The German Acupuncture Trials also used the back-specific Hanover Functional Ability Questionnaire (HFAQ) as well as the Neck Pain and Disability Scale (NPAD) as primary outcome measures for acupuncture's effect on chronic back and neck pain, respectively. It concluded that acupuncture was effective in improving both conditions[5].

Chronic pain is often accompanied by depression and other psychological factors which strongly influence the experience and consequences of pain. Patient beliefs and attitudes towards pain can substantially affect the way they perceive it. Those beliefs can be investigated by the Illness Perception Questionnaire. Nevertheless, as pain and its emotional components are strongly interlinked, it is difficult to assess whether acupuncture has any beneficial psychological effect in addition to pain relief and whether these effects are specific to acupuncture or are the consequence of the hope associated with treatment. Evaluating these aspects may be a challenging, yet, valuable direction for future study. What can be measured, however, is patients' overall quality of

life. Two examples of quality of life questionnaires that have been validated are Short-Form-36 (SF-36) and Nottingham Health Profile[3]. QoL was assessed with the SF-36 questionnaire, using the subscales and the component scales, in the Acupuncture in Routine Care programme, as part of the '*Modellvorhaben Akupunktur*' project.

The questionnaire also served as the basic benefit estimator of the cost-effectiveness analyses. The QoL measures obtained were then converted to quality adjusted life years, QUALYs. The study showed acupuncture's effectiveness in increasing patients' quality of life, as well as proved the treatment to be cost-effective[6].

Finally, when measuring the outcome of any intervention for pain, one needs to be aware of the 'hello-goodbye' phenomenon, which describes patients' tendency to exaggerate symptoms when requesting help and to minimize them afterwards to please the therapist. While it is difficult to avoid this behaviour in clinical practice, it can be minimized in research. It is done by ensuring the patients that they will receive the treatment regardless of the severity of pain experienced and that the evaluation form for the treatment outcome will not be shown to the therapist.

Apart from the subjective nature of the conditions acupuncture is used for, the research into its effectiveness faces other challenges too. Due to acupuncture's nature, the double-blinded placebo-controlled randomised trials are impractical and often fail to reliably assess the effect of therapy. Acupuncture includes a number of different modes of stimulation producing varied results that have to be considered in decision-making about the use of acupuncture[7].

In response to different modes of acupuncture stimulation, different endogenous pain inhibitory pathways are activated. This explains why different modes of acupuncture may cause distinct effects. As a result, sham acupuncture, a form of physical stimulation which has been proposed as a 'placebo' for acupuncture trials, will still produce a degree of physiological response. Therefore, a 'placebo' control, which, by definition, needs to be inert, is not achievable in the case of acupuncture. This has been confirmed by the Acupuncture Randomised Trials carried out as part of the Model Projects on Acupuncture in Germany. It was shown that sham acupuncture, in the form of minimal off -point needling in a therapeutic context, was still effective, being no different to prophylactic medication for migraine and superior to guideline-based standard care in chronic low back pain[5].

Due to the limitations of randomized controlled trials in acupuncture research, alternative study designs have been proposed. In a comparative trial, the control group receives the best of a standard treatment, while the acupuncture group is given acupuncture. Hence, instead of equalising the 'placebo' effect between the two groups, this trial is designed to optimise the treatment effects in both arms of the trial, thereby enabling a reliable comparison between the two entities. A comparative trial of acupuncture and metoprolol (100-200 mg) was conducted as part of the German '*Modellvorhaben Akupunktur*' project, which concluded superiority of acupuncture over metoprolol in the reduction of frequency of migraines[8]. McQuay and coauthors[9] suggested another alternative trial design to capture the reality of the range of responses to acupuncture in clinical practice - the enriched enrolment with randomized withdrawal (EERW). The information gathered in the pre-randomisation phase, including the proportions of responders and non-responders, the optimal dose, and the number of withdrawals due to adverse effects or lack of efficacy, brings additional data for defining new treatment protocols. Allowing for a naturalistic approach whereby the patient undergoes trial treatments before selecting the modality preferred, this design optimizes the treatment effect. It has been proposed that the EERW trials may be used to avoid a false conclusion of lack of efficacy of acupuncture, especially in chronic pain conditions where treatments neither cure nor fundamentally alter the status of the underlying disease[2].

The search for valid outcome measures of acupuncture has led to the formulation of Standards for Reporting Interventions in Clinical Trials for Acupuncture (STRICTA). These guidelines were designed to facilitate transparency in published reports, enabling a better understanding and interpretation of results, aiding their critical appraisal and providing the detail necessary for replication, all of which are essential for validation of research. The guidelines were originally published in 2001 and have been recently revisited. To enhance awareness, endorsement and adherence, the revised STRICTA statement has been developed as an extension to the Consolidated Standards of Reporting Trials (CONSORT)[10]. The STRICTA guidelines were adhered to in the German Model Projects on Acupuncture, '*Modellvorhaben Akupunktur*', which have gained vast recognition and now constitute the role models of research into acupuncture's effectiveness.

Conclusion

Acupuncture is a complex, multi-methodological treatment approach, with documented effectiveness in alleviation of subjective complaints, such as pain. As in any form of therapy, evidence-based medicine is

essential in acupuncture and, therefore, valid outcome measures are the crux for research validation. However, the 'evidence' should include patient's perspective, taking into account individual variation and measures such as health-related quality of life as well as systematic effects (group effects).

Furthermore, the practice of acupuncture has many unique features and research needs to be deferent of this. Therefore, instead of the randomised controlled trials, which are impractical in the context of acupuncture, researchers ought to use alternative study designs such as, e.g. pragmatic trials, enriched enrolment with randomized withdrawal, naturalistic protocols and/ or observational studies. Finally, it is essential for the studies to be correctly reported with the detail necessary for critical appraisal and replicability.

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I Sing the Body Electric: a Historical Perspective of Cardiopulmonary Resuscitation

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"I sing the body electric
The armies of those I love engirth me and I engirth them,
They will not let me off till I go with them, respond to them [1]"

This verse from Walt Whitman's poem[1] sings the praises of life, and is an adept metaphor for the long and fascinating history of cardiopulmonary resuscitation.

We can trace the origins of cardiopulmonary resuscitation back to antiquity in both mythology and theology. For many years the human breath was the sign and symbol of life and one of the few available measures of it[2]. Towards the end of 18th century, the breath came to be associated with the perhaps less romantic concept of resuscitation However the development and refinement of resuscitation did not occur properly till the 19th and 20th centuries.

Airway management was advanced in the 18th Century by two important Scottish pioneers: the obstetrician William Smellie, with his introduction of the endotracheal tube in 1763, and the physician John Hunter with his studies using bellows to resuscitate dogs. In 1776 through the presentation of an article, 'Proposal for the recovery of people apparently drowned[3]', in the Royal Society of Medicine in London, Hunter demonstrated how lack of oxygen leads to cardiac dysfunction.

At the end of the 20th century, the foundations of resuscitation as a specialty were laid with the formation of rescue societies, which were forerunners of the modern ambulance and emergency medical services. The first of these societies was in the Netherlands in 1767, as the Society for Recovery of Drowned Persons[4]. This was soon followed by the Royal Humane Society in London and others in New York, Philadelphia and Boston.

Another vital development in resuscitation was the understanding of nascent electricity and its corollary experiments. The first of these experiments was conducted by the Italian scientist Luigi Galvani, who observed the contraction of the legs of frogs and of humans after electrocution. The first reported use of electric shock as a resuscitative experimental method in the literature involved a child, Sophie Greenhill, in 1776. The Humane Society of London [5], described that the girl fell from a window and was 'picked up by a man in a state of apparent death.' A Mr. Squires applied electricity to various parts of her body but only when he applied it 'through her chest' did he feel 'a small pulse, and within a few minutes the child began to breathe with great difficulty.'[6]

Writing in 1776, John Hunter in a review of the article 'Proposal for the recovery of people apparently drowned" remarked, "Electricity is a useful tool and should be used where others have failed ... it is likely that this is the only method that we have to stimulate the heart in an instant'[7]. It was audacious and extraordinary

statement at the time and echoed the romantic novel Frankenstein by Mary Shelley published 30 years earlier. From experiments conducted on dogs in 1850 by Dr. Carl Ludwig and Dr. Mauritius Hoffa[8], was the discovery that electrical stimulation was capable of causing ventricular fibrillation.

The foundation of cardiac massage was laid by the 19th century German anatomist Moritz Schiff when he attempted to counter the two potential fatal side effects of the 'new' chloroform: cardiac and respiratory arrest. Schiff's views on the influence of the CPR in maintaining the 'nutrition'[9] of the myocardium would be acknowledged and used many years later. In 1872, surgeon Thomas Green described[10] six successful resuscitations out of seven attempts following cardiac arrest from chloroform. In these cases, a galvanic battery permanently installed in his operating room was used. A few years later, the Scottish physiologist John A. Mac William, before an audience of the 1887 International Medical Congress, showed how the ventricular fibrillation could be interrupted by application of shock[11].

In 1899, the physiologists Geneva Jean Luis Prevost and Federico Batelli demonstrated[12] that electrical discharges could cause arrhythmias that return the heart to normal rhythm: and so for the first time, the effectiveness of defibrillation on animals was proven.

It was in the 20th century that the principles of resuscitation would be fully developed and make quantum leaps in development. The work of Moritz Schiff on open chest cardiac massage was succeeded by the physiologists Starling and Lane in 1902[13], with trans-diaphragmatic cardiac massage and by Inglesburd in 1904. A key step was supplied in 1906 when Dr. George W. Criley and Dr. David H. Dolley were attempting to resuscitate dogs and realized that the key to the recovery of their specimens was preventing them from acquiring ischemic brain injuries.

Other phenomenal developments made in cardiopulmonary science included the Irish anesthesiologist Ivan W. Magill inventing the endotracheal flexible tube, scissors for intubation , the anesthetic spray for intubation, the straight blade laryngoscope and other resuscitator devices in 1919. This was due to challanges he faced when attempting to ventilate veterans from World War I while they were undergoing facial surgery.

In the years preceding the Second World War, New Zealand anesthesiologist Robert R. Macintosh further improved intubation techniques with his namesake curved blade laryngoscope.

Inn 1953 the German engineer Holger Hesse and the Danish anesthesiologist Henning Ruben invented the first self-inflating balloon, marketed by AMBU®. AMBU® was the company that created them and their namesake has become their legacy, still used today. A few years later, the Guedel cannula was invented by US anaesthesiologist Arthur Guedel.

In 1936 professor of Physiology Carl J. Wiggers demonstrated to the American Physiological Society the combined use of defibrillation with cardiac compressions in an attempt to increase the chances of success. In 1940, together with Dr. René Wegria they discovered that ventricular fibrillation could be induced in the heart during a precise period called the 'vulnerable period'. The future cardiac pacemaker science was consequently deduced from these findings.

In 1957 the American engineer William Bennet Kouwenhoven, who dedicated almost three decades of his life on cardiopulmonary research, after conducting experiments on dogs developed the (second) external defibrillator used on human beings. In the same dacade, the Harvard cardiologist Paul Zoll made a similar discovery.

It was, however, William Bennet Kouwenhoven, with Guy Knickerbocker and James Jude of Johns Hopkins University who serendipitously discovered a crucial finding. In their studies on the defibrillation of dogs, they applied paddles with pressure on the chest of the dog and obtained a femoral pulse. In 1960 they demonstrated [14,15] the effectiveness of the technique of the 'closed-chest cardiac massage' in 20 clinical cases of intra-hospital arrest. The survival rate was an astounding 70%.

This technique was already described by British dentist John Hill in 1868[16] and and several other times in the annals of cardiopulmonary research. The group Kouwenhoven perfected the technique in order to be able to compress the heart in human subjects without damaging the chest and abdominal structures.

An effective technique albeit with a misnomer is 'cardiac massage', the term used by the cardiac surgeon Claude B. Beck in 1947 . Beck described massaging the heart of a boy with his hands for 45 minutes in ventricular fibrillation and subsequently performed defibrillation with an internal electrical defibrillator developed by scientist (and friend) James Rand[17]

The principle of the external defibrillator by using direct current (DC) to re-start the heart was put to the test by Dr. Bernard Lown in the early 1960s who demonstrated that this was both a safe and effective technique. James Francis Partridge, a 20th Century Irish Cardiologist and Dr John Geddes developed this technique and invented the first portable external defibrillator in 1965 (the device itself weighed approximately 70 kg and was actually installed in ambulances in Belfast, Northern Ireland and was connected to the battery of the vehicle). A 3kg portable external defibrillator, however, soon followed suit and became available only 3 years after Partridge's and Geddes's contraption. It was Dr. Thomas and Dr Watkins, however, who are credited for the creation of the first implantable defibrillator.

Taking a little trip down history lane, during the 1946 polio epidemic in Minnesota, physician James Elam applied mouth-to-mouth respiration on an child with no spontaneous breathing.
As he described it:

'*I sealed my lips around his nose and his lungs inflated. In four breaths, he was pink*.[20]'

Elam had fortuitously come across this technique the previous night when perusing a book on the history of neonatal resuscitation.

This episode informed and guided his subsequent research with the physician Peter Safar. Together they demonstrated the effectiveness of their technique of artificial mouth-to-mouth respiration. It was promoted in 1958 by the peer-reviewed medical Journal of the American Medical Association (JAMA) as an "easily learned, lifesaving procedure in both emergency conditions and in the field[21]".

From their work disseminating ideas to the scientific community and to the general public, there arose the need to introduce manikins for training in ventilation techniques. The first manikin was called 'Miss Sweet Breath' and was invented by Roger Mehalek in 1959. Mehalek was a Red Cross volunteer in Kalamazoo, Michigan. The second manikin was designed by Safar and the Norwegian toymaker Asmund Laerdal and was renowned globally: what was truly extraordinary about CPR Annie was that it was a manikin with human features and size.

However, the formal marriage between the ventilation techniques of Helam and Safar and the cardiac massage and defibrillation procedure of Kouwenhoven and Jude took place in September 1960 at the annual meeting of the Maryland Medical Society, where they were presented for the first time together. This event was promulgated as the birth of modern CPR and this reconciliation was heralded by great advances in this field.

Kouwenhoven and Jude embarked on a world tour to disseminate the newly formed CPR Safar and they assigned director David Adams to produce an educational video. Thus was born 'The Pulse of Life', a 27-minute motion picture in which for the first time the letters of the acronym A (for 'airways'), B ('breathing'), C ('circulation') were emphasized as an aide memoir to students to remember the life-saving sequence for resuscitation. The defibrillator arrived on the scene in 1965, thanks to professor Pantridge, who formed the first coronary care unit in Belfast Mobile (MCCU). Professor Pantridge drafted a report[22] in 1967 on 312 patients treated by the MCCU staff over a 15 month-period , half of this sample had heart attacks in progress and 10 were rescued with a cardiac arrest in progress. All 10 were resuscitated and admitted to the hospital, which was a truly amazing achievement. The foundations of the modern chain of survival had been laid[23].

200 years since the birth of the first rescue company on August 1767 and with the "System Belfast" of Professor Pantridge[22] and the discoveries of Jude, Helam, Safar and Kouwehowen CPR continues to be used as a standardized approach all over the world and has saved a countless number of human lives. Yet the mantra today as it was yesterday, remains the same: to fulfill the promise: to save 'hearts too good to die'[24].

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What do nurses expect from newly qualified doctors?

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Abstract

The 2009 GMC document 'Tomorrow's Doctors' identified the standards expected of Newly Qualified Doctors (NQDs). Nurses regularly observe Foundation Doctors in the clinical environment. We investigated if the observations and expectations of nurses reflect the GMC standards. Methods: Twenty-two nurses of varying experience were recruited across medical and surgical specialities. The 41 skills and domains recommended in Tomorrow's Doctors that the researchers considered would be most applicable to the nurses' observations were identified by consensus. The participants were asked which of the domains they expected and which they had observed a NQD to be able to perform. Qualitative data using semi-structured interviews was collected regarding the conduct and attitudes of NQDs and analysed using thematic analysis. Results: Nurses have a low expectation of NQDs skills and abilities. This is not only in regards to perceived competence but also the breadth of skills nurses have observed NQDs to possess. Conclusions: Outside of formal ward rounds nursing staff decide whom to contact in the medical team. Lack of knowledge with regards to an NQDs skill set may result in NQDs being by passed in favour of more experienced members of the team. Therefore efforts should be made to increase awareness amongst nursing staff and allied health professionals of the GMC's guidance on NQDs.

Introduction

The General Medical Council have provided a clear definition of the standards expected of undergraduate medical training[1,2]. Originally published in 1993[1], "Tomorrow's Doctors" was revised most recently in 2009 [2]. It states that: "medical schools must ensure that all graduates have achieved all the outcomes set out in Tomorrow's Doctors". Hence, at commencement of Foundation Training, all doctors should be competent in the stated outcomes and practical procedures of "Tomorrow's Doctors" (2009).

A number of publications have considered how well prepared graduates are to take on the role of Foundation Doctor. Jones et al[3] and Wall et al[4] considered preparedness of graduates for the role of PRHO using competencies taken from "The New Doctor"[5-7]. However, these competencies are to be gained after graduation from medical school and are not expected at the commencement of postgraduate training. Despite this, both studies demonstrated that newly qualified doctors felt prepared for communication skills and teamwork and were aware of their own limitations. However, they felt poorly prepared for specific skills such as suturing.

Goldacre reported wide variations between medical schools in how well equipped doctors felt their medical training had made them for their jobs. Of 3062 newly qualified doctors questioned, only 36% agreed that their training had prepared them well for the jobs they had undertaken whilst 40% disagreed[8]. Concerns from graduates about their confidence to perform practical procedures were also highlighted by the GMC Education Committee[9]. Furthermore, Morrow et al (2012) considered the views of 479 graduates with regards to

their own preparedness for practice as a doctor across three medical schools with different teaching styles. Graduates felt more prepared for aspects of working with patients and colleagues, history taking and examination and were least prepared for completing a cremation form, some aspects of prescribing and complex practical procedures. There was no significant difference between schools.[10]

Matheson and Matheson[11] considered the views of consultants and specialist registrars (SpR) regarding the preparedness of Foundation Doctors against items listed in Tomorrow's Doctors 2003[12] and their findings were consistent with the aforementioned studies. Of the knowledge and skills that graduates must be able to demonstrate and perform, recognising their own limitations and asking for help scored the best. However, the average F1 was deemed unprepared for practice by the SpRs and Consultants surveyed.

The evidence so far suggests that NQDs and their trainers believe current training prepares them well for communication skills and team working but feel inadequately prepared for being able to carry out practical skills

Aims

Newly qualified doctors spend a considerable amount of their time in clinical areas where nursing staff are well placed to observe them. This small scale study aims to explore nurses' expectations and perceptions of newly qualified doctors, not previously reported in the literature, and to define whether they meet the standards and possess the skills defined by the GMC for newly qualified doctors.

Method

The study was designed as a mixed methods research project using a structured questionnaire which had been piloted and modified. To assess the doctor as a professional we collected qualitative data, which underwent thematic analysis. The doctor as a practitioner took a quantitative approach using Likert Scales. Thirty members of nursing staff from diverse clinical settings within a Hospital Trust were sampled after being consented for their participation. The nurses were chosen at random across both medical and surgical specialities to gather as wide an experience as possible. The questionnaire was distributed via email and paper with responses kept anonymous.

The study considered the practical procedures listed in Tomorrow's doctors 2009 along with a selection of other outcomes that the researchers considered applicable to nurses' observations of doctors. The questionnaire listed 42 outcomes/skills and asked nursing staff if they expected a Foundation Doctor to be able to do each on day one of their job. They were also asked to indicate which outcomes they had actually observed newly qualified doctors to be able to do at the commencement of their jobs. Free text questions evaluated nurses' perceptions of newly qualified doctors with regard to professionalism and probity. The majority of outcomes were taken from those listed under "the doctor as a practitioner" and "the doctor as a professional" as it was felt that "the doctor as a scholar and scientist" were too difficult to assess and may not be well observed by nurses.

Ethical Approval was obtained from Greater Manchester West and NHS North West Strategic Health Authority.

Results

Questionnaires were sent to 30 nurses and 22 responded giving a response rate of 73%. 10 (45%) worked in a surgical setting and 12 (55%) in a medical setting. The average number of years worked as a nurse was 15 years, which matched the median (range 0.2 years - 30 years). 11 participants worked as Staff Nurses, 9 were Sisters and 2 were ward managers.

The doctor as a practitioner

Nurses were asked about 42 outcomes and practical skills from Tomorrow's Doctors 2009 and table 1 shows the number of nurses out of the 22 questioned that considered each of the outcomes appropriate for a NQD. Only 6 of the skills/outcomes were thought by all the nurses appropriate for a newly qualified doctor (NQD) to be able to do at the commencement of their Foundation Training. These included measuring body temperature, blood pressure and heart rate, oxygen saturation, urinalysis, aseptic technique and infection control measures. The skills that were thought by fewest nurses to be appropriate on day one were using infusion devices, making up IV medications and suturing (see table 2).

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Outcome/Skill	n	Outcome/Skill	n
Measuring body temperature	100	Using a defibrillator	73
Measuring BP and HR manually	100	Assessing a patient's capacity for consent	73
Urinalysis	100	Performing an ECG	68
Infection control measures (eg apron and gloves)	100	Contribute to the care of the families of dying patients	64
Aseptic technique including hand washing	100	Talking to relatives	59
Oxygen saturation monitoring	95	Dosing insulin and sliding scales	59
Pregnancy testing	95	Certify death	59
Venepuncture	95	Taking blood cultures	59
Taking nose, throat and skin swabs	95	Female catheterisation	55
Administering oxygen	95	Giving results to patients	55
Daily ward round	95	Interpreting an ECG	55
Safe disposal of clinical waste and sharps	91	Giving local anaesthetic	55
Cannulation	86	Management of symptoms in care of the dying	50
Prescribing IV fluids	86	Interpretation of X-rays	50
Measuring blood glucose	86	Breaking bad news	50
Correct prescribing of common medications eg painkillers, antibiotics	86	Performing and interpreting telemetry	45
Nutritional assessment	82	Administering blood transfusions and the correct procedures for doing so	45
Subcutaneous and intramuscular injections	81	Consenting for operations	41
Correct techniques for moving and handling	77	Suturing	32
Requesting appropriate bloods	73	Making up IV medications	23
Male catheterisation	73	Use of infusion devices	18

Table 1: *The doctor as a practitioner, n = % of nurses who thought it to be appropriate*

Skills thought appropriate by all nurses n=22	Skills thought appropriate by fewest nurses
Measuring body temperature	Using infusion devices n=4 (18%)
Measuring blood pressure	Making up IV medications n=5 (23%)
Measuring oxygen saturation	Suturing n=7 (32%)
Urinalysis	
Aseptic technique	
Infection control measures	

Table 2:

The skills that fewest number of nurses thought appropriate for NQDs matched what nurses had observed the NQDs to be least competent in. Of the skills that all nurses thought a NQD should be able to do, not all nurses thought that NQDs actually were competent at (Table 3).

Skills thought appropriate for a NQD by all nurses (n=22)	No of nurses who thought NQDs could actually do skills
Measuring body temperature	13 (59%)
Measuring blood pressure	15 (68%)
Measuring oxygen saturation	15 (68%)
Urinalysis	14 (63%)
Aseptic technique	18 (82%)
Infection control measures	17 (77%)

In fact, none of the skills in the questionnaire were thought by all the nurses to be accomplished by NQDs.

In contrast, for some skills, more nurses thought the NQDs were able to do them than expected them to be able to do. These were requesting bloods, taking blood cultures and aseptic technique.

The doctor as a professional

Themes emerging when asking about the NQD as a professional
- Lack of confidence
- Variable levels of knowledge compared to previously
- Attire linked to professionalism
- Reduced responsibility for patient care

Five out of the twenty-two nurses questioned stated that recent NQDs had not met their expectations. The reason given by all five was that the NQDs lacked prioritisation skills and confidence. The length of time practising as a nurse in this group of five nurses ranged from 15 years to 30 years indicating that they were the more experienced nurses out of those surveyed.

When asked if the nurses thought their expectations of NQDs had changed over time, a theme that emerged was that as they themselves had gained experience, they became increasingly aware of the pressure and responsibility newly qualified doctors are faced with. However, 15/22 nurses made specific reference to the variable levels of knowledge amongst NQDs compared with previously. None of the nurses had noticed a difference between female and male NQDs.

When asked about the professionalism of NQDs, 7 out of 22 nurses made specific reference to attire being less professional than previously with comments such as

- "they wear 'trendy' clothes rather than what is appropriate and professional"
- "the white coat used to distinguish them as doctors but sometimes now it can be difficult to tell who they are"

Other comments relating to attitudes and professionalism were focused around NQDs taking responsibility for patient care

- "they often seem stressed and overworked .... and seemingly not wanting to take responsibility for their patients"
- "some are more than willing to help but many are not"
- "they take on less responsibility and always seem to need support from seniors"
- "they seem to think some duties are below them - such as admin and clerical work like signing blood forms and rewriting charts"

When asked if the majority of NQDs are respectful towards them and others and if NQDs took their advice when it was offered only one nurse answered no.

Discussion

Nurses are a vital part of the multidisciplinary team and are the closest point of contact to NQDs. With the introduction of multi source feedback and workplace based assessments, they are becoming increasingly important in on-going feedback and the assessment of NQDs.

This small-scale study demonstrates that nurses' expectations of the clinical skills and duties of a NQD do not reflect the standards laid out by the GMC. In fact, nurses expect much less from NQDs than what the GMC stipulates as mandatory with only six of forty-two of the outcomes and skills considered by all nurses to be appropriate for a NQD. Nurses are often the first responders to patients and they are responsible for contacting a member of the team to address the needs of the patient. It may be that newly qualified doctors are missing out on opportunities as nurses bypass them in favour of more senior members of the team due to a lack of awareness as to what NQDs should be able to do.

This study does reassure us that in general the nurses are happy with the professionalism of newly qualified doctors. The piloting process determined what nurses considered to be professionalism and the common theme uncovered was respect for others, which the nurses questioned believe NQDs demonstrate. However, the free text responses in the questionnaire allowed for other ideas and comments with regards to professionalism of NQDs to be voiced and although not the focus of the study, attire was a major theme that came up with nurses believing it to contribute to professionalism. Many nurses believe that laxity in attire contributes to a less professional appearance.

This is in keeping with studies by Palazzo et al[13] and Bond et al[14] who have demonstrated that patients consider a doctors' dress code to be important. Bond et al conducted a patient perception survey and showed patients felt formal attire was considered to be the most professional and easiest to identify the person as a doctor. Surgical scrubs were considered to be the most hygienic and 'bare-below-the-elbows' received the least votes.

Furthermore, it appears that nurses have noticed that NQDs seem more reluctant than previously to take responsibility for patient care. However, other studies have shown that NQDs are more likely to recognise their own limitations[3,4]. Perhaps it is this, along with increasing litigation that contributes to a perceived lack of confidence and need for senior input to patient care. Would they previously have simply "had a go"?

Another interesting point to explore is what shapes nurses expectations. They are unlikely to have read Tomorrows Doctors as evidenced by our results as they thought many of the outcomes listed were inappropriate for a NQD. It is therefore likely that their expectations have been formed from experience. However their observations of recent NQDs do not match their expectations either. They have observed them to be able to do less than what they would expect them to be able to do. When asked if their expectations have changed over time, it seems not to have done. This would suggest that NQDs can do less now than previously. Or is it simply that they have less confidence or are more willing to ask for help? Matheson and Matheson[11] raise the issue of consultants wearing rose tinted glasses when asked about their views of NQDs. Does this stand for nurses and do we expect too much? Do we remember things previously as better than they actually were?

One of the nurses out of the 15 who commented on an increasing amount of variability in competence amongst NQDs compared to previously attributes the variability to be due to "experience and confidence and only occasionally a lack of knowledge". This is an interesting comment and further qualitative studies may enlighten us as to if there is actually a lack of knowledge amongst juniors or simply a lack of confidence or higher levels of insight in to their own limitations than before.

Limitations and areas for further work

The sample size of the nurses questioned was small in order to obtain an initial analysis of their views. It is therefore difficult to conclude definitively what nursing staff believe or witness but it does highlight the divide between what NQDs have been accredited as being able to do and what nursing staff perceive or see them being able to do in the workplace. Tomorrow's Doctors is a large document and it would therefore be useful to study discrete elements of the document such as professionalism or skills in more detail with a larger sample size to obtain more quantitative data. Doctor's attire was an issue that arose unexpectedly in this study and is thought by nurses to contribute to professionalism. Many trusts have introduced uniforms for medical staff in order to help address the "bare below the elbows" ethos and this would be an interesting area to study in more detail.

Conclusion

It is essential that nurses are informed of what NQDs should be able to do. They are a vital part of the team and are well placed to observe NQDs. Their observations and opinions can offer us an extra dimension to our understanding of how our current NQDs are performing. However, it is not up to the nurses to decide what a NQD should be able to do. It is the doctor's responsibility to know his or her own limitations and to seek help and when necessary. The authors believe that improved awareness amongst nursing staff as to what should be expected of NQDs could improve opportunities for trainees in addition to helping nurses identify trainees who are not meeting standards. An interesting research question would be to ask NQDs how important they perceive nursing staff's views are compared to consultant's views and if their views would have any effect on their behaviour and attitudes.

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The Management of Transient Loss of Consciousness (TLOC) in Adults and Young Adults

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Keywords:

Transient loss of consciousness, Syncope clinic referral form, Collapse, Syncope, Blackout

Abstract

Transient loss of consciousness (TLOC) is defined by the NICE guidelines as an episode of spontaneous loss of consciousness with complete recovery, with no residual neurological deficit. It is a common presenting complaint in the Emergency Department and its management is complex and often time consuming. Aim: The aim of this retrospective audit is to measure the current practice in the Royal Liverpool Hospital (RLH) with the management and referral of patients attending with a history of TLOC and to assess the impact of the Syncope Clinic referral form (appendix 1) on the previous practice. The audit compared the pre-intervention practice in the ED and the post-intervention practice, with the current NICE TLOC standards used for risk stratification and follow up. Methods: 30 patients were selected by reviewing their casualty cards with the inclusion/exclusion criteria. The Emergency Department System (EDMS) was accessed and the NICE audit tool (appendix 2) used to collect the data from the casualty cards. Two to three months after the intervention, the same methods were used to select a further 30 patients. Results: The complex results post intervention shows a worsening in all areas, with the exception of Syncope Clinic as there were no patients identified in the intermediate risk group for comparison. Conclusions: The results post-intervention identify the need for a full initial assessment that should be emphasized to doctors in acute settings along with mandatory ECG. A proforma needs to be implemented into the ED and AMAU for accurate streamlining and risk stratification of patients with TLOC that will lead the user towards the appropriate method of disposal. Interdepartmental teaching on the new proforma and on the NICE TLOC guidelines should be carried out. This should then be followed by a re-audit.

Introduction

Transient loss of consciousness (TLOC) is defined by the NICE guidelines as a spontaneous loss of consciousness with complete recovery; no neurological deficit. It is a common condition and is likely to affect as many as half the population at one time or another. Thus it is a common presenting complaint in the Emergency Department and an appropriate decision is then needed as to the cause and the most optimal management plan, either discharge, admit or refer to an outpatient clinic. Its management is complex and often time consuming. Incorrect disposal of patients could prove dangerous if high risk symptoms were not acted upon or expensive when low risk patients are admitted unnecessarily.

There are a variety of causes for TLOC including cardiovascular, being the most common and neurological and psychogenic conditions. Evidence gathered by NICE suggests that patients are often incorrectly referred; patients treated for epilepsy and sent to a neurologist who then go on to have an abnormal ECG and a cardiac cause of TLOC. It is relevant to the diagnosis and management of patients regarding the circumstances of the TLOC and a detailed history is imperative as is a thorough examination. People will use various terminologies to describe the TLOC such as blackout, pass out, fainting or collapsing, collapsing may occur though without loss of consciousness.

The syncope referral form (appendix 1) used as the intervention in this audit uses the NICE risk symptoms to stratify patients into High risk - with red flag symptoms requiring admission and cardiology review within 24hrs, intermediate risk - true TLOC with no red flag signs for syncope clinic referral and similarly, low risk patients who

could be safely discharged to their GP. Although this is called Syncope clinic it does actually assess all levels of risk, to prevent inappropriate referrals of high or low risk patients to Syncope Clinic.

Aim/Objective

The aim of this audit is to measure the current practice in the Royal Liverpool Hospital with the management and referral of patients attending with a history of TLOC and to assess the impact of the Syncope Clinic referral form on the previous practice. The audit compared the pre intervention practice in the ED and the post intervention practice, with the current NICE TLOC standards for risk stratification and follow up. A target of 100% compliance would be the goal expected.

This audit could improve patient care and the patient journey through appropriate referrals, which could lead to less inappropriate admissions and less re-admissions. Some patients could be followed up safely as outpatients in specialists clinics, led by the Cardiologists or by their GPs. This could lead to cost savings, with fewer beds taken unnecessarily in the hospital.

Method

A retrospective audit was carried out. The audit department used the following phrases when searching the Emergency Department database, collapse, syncope, TLOC, loss of consciousness and blackout. Thirty patients (agreed number with the audit department) were selected by reviewing their casualty cards with the inclusion/exclusion criteria. Two to three months after the intervention, the same methods were used to select a further thirty patients.

Inclusion Criteria:

- Documented history of true loss of consciousness

Exclusion Criteria:

- Patients who were known to have seizures
- Patients with a history of alcohol consumption prior to the collapse
- Patients known to have alcohol related seizures
- Patients who already had a prior diagnosis
- Patients with prolonged loss of consciousness/coma
- Patients without loss of consciousness
- Patients under 16 years old
- Patients with sustained loss on consciousness after head injury

We used the NICE audit tool to collect the data from the casualty cards using the EDMS system. The audit tool is designed to gather information about the questions asked of patients and their witnesses about the events pre and posts episode of TLOC; medications, their general health, family history, social history, a witness history as of premium importance. The full history with the examination is referred to as the diagnostic pathway. This then goes on to denote the route of disposal of the patient; high risk should be admitted and cardiology review within 24hrs, intermediate risk for syncope clinic or low risk for discharge, forming the crux of this audit.

Results

High Risk Patients

Transient loss of consciousness (TLOC)

↓

High Risk
Structural heart disease
Family history of sudden death
Abnormal ECG
Syncope 2° to noise or swimming
Syncope on exertion
Syncope with chest pain

↓

ADMIT

High Risk – Pre Intervention

	High Risk	Admitted	Seen by CV<24hrs	Appt Given	D/C had prior appt	D/C no F/U
Patient Numbers	16	12	9	1 CV 1 Dr Diack	2 with CV	0
No ECG	1*	0	0	0	CV	0

*Awaiting loop recorder

High Risk – Post Intervention

	High Risk	Admitted	Seen by CV<24hrs	Appt Given	D/C had prior appt	D/C no F/U
Patient Numbers	11	6 to medics 1 to OBS	3	0	1 PPM check	4 1 from OBS
No ECG	1*	0	0	0	0	GP to F/U

* TLOC on exertion

***Table 1**: No. of patients in the high risk category and subsequent routes of disposal*

Intermediate Risk Patients

Transient loss of consciousness (TLOC)

↓

Intermediate Risk
True TLOC
No high risk features
Recurrent vasovagal / situational syncope
Diagnostic uncertainty

↓

Syncope Clinic

Intermediate Risk – Pre Intervention

	Intermediate Risk	Syncope Clinic Referral	D/C CV Appt Already	D/C no F/U
Patient Numbers	3	1	1	1*

*Ambiguous as no diagnosis

Intermediate Risk – Post Intervention

	Intermediate Risk	Syncope Clinic Referral	D/C CV Appt Already	D/C no F/U
Patient Numbers	0	0	0	0

***Table 2**: No. of patients in the intermediate risk category and subsequent routes of disposal*

Low Risk Patients

Transient loss of consciousness (TLOC)

↓

Low Risk

Simple vasovagal or situation syncope
Diagnostic uncertainty

↓

Reassure and **discharge** to GP

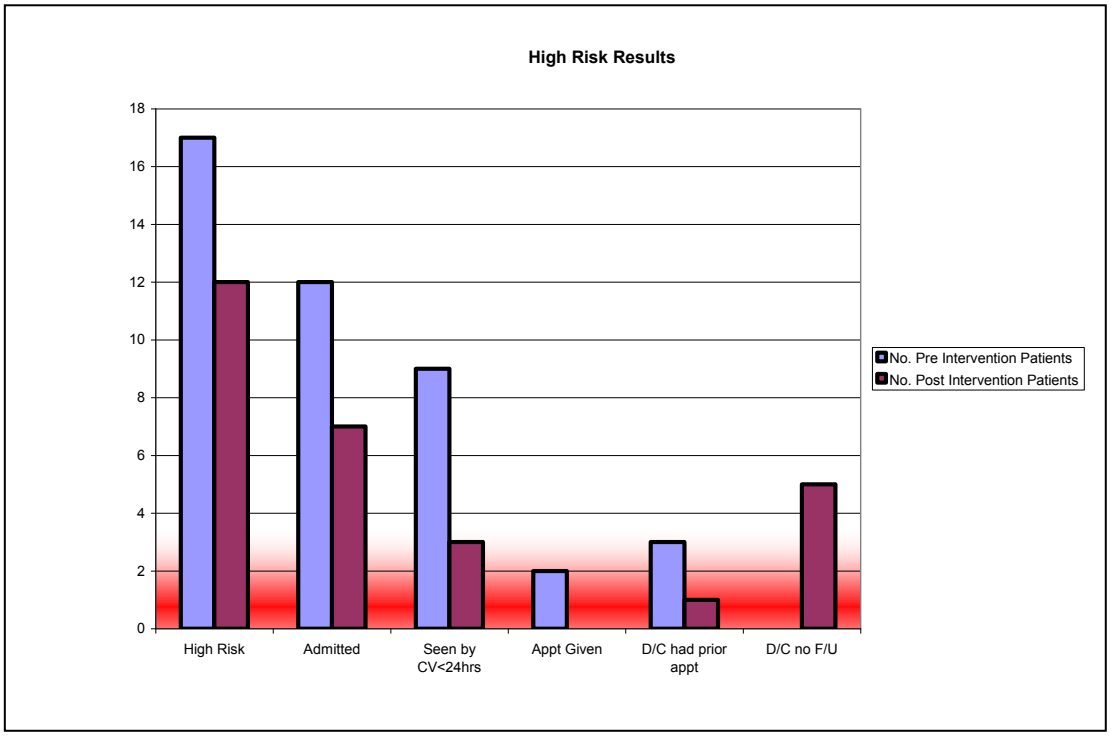
Low Risk – Pre Intervention

	Low Risk	Discharged	GP Letter	F/U	Admitted
Patient Numbers	6	6	1	0	0
No ECG	2	2	0	0	0

Low Risk – Post Intervention

	Low Risk	Discharged	GP Letter	F/U	Admitted
Patient Numbers	13	12	0	1 SC-VV	1 H'ache CT LP Neg
No ECG	2	2	0	1 CV	0

***Table 3**: No. of patients in the low risk category and subsequent routes of disposal*



***Graph 1**: Comparison method of disposal of high risk patients between pre-intervention (blue) and post-intervention (purple)*

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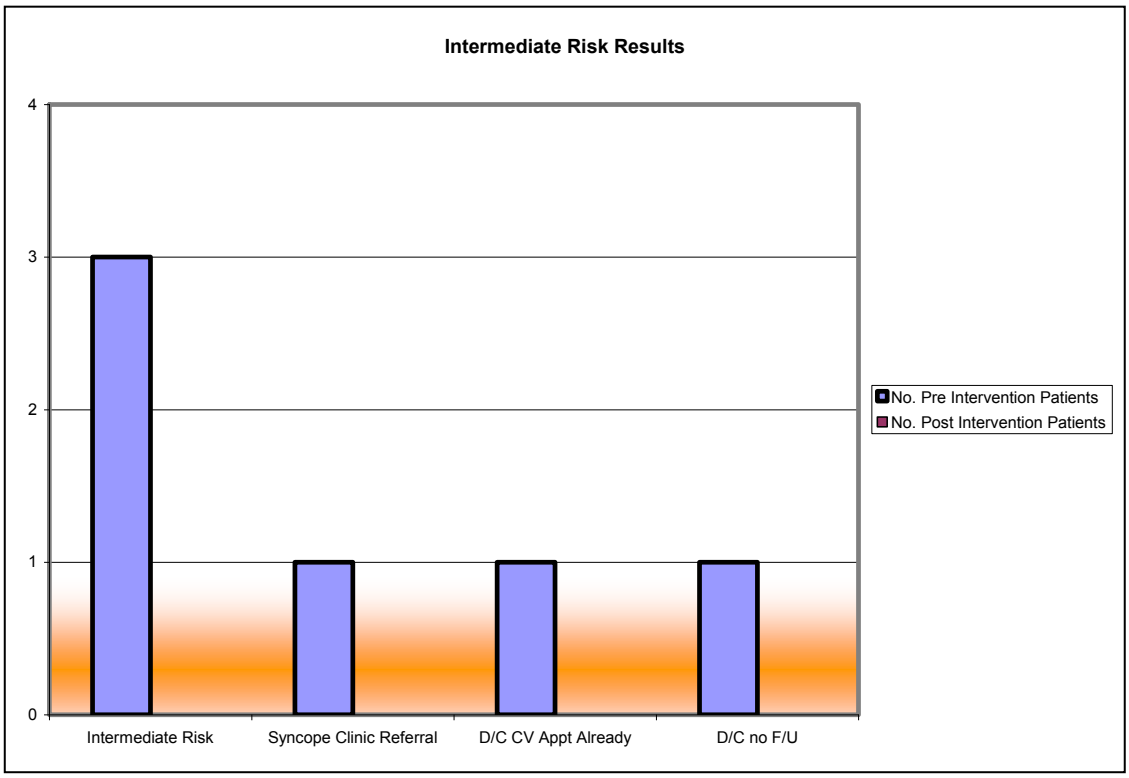
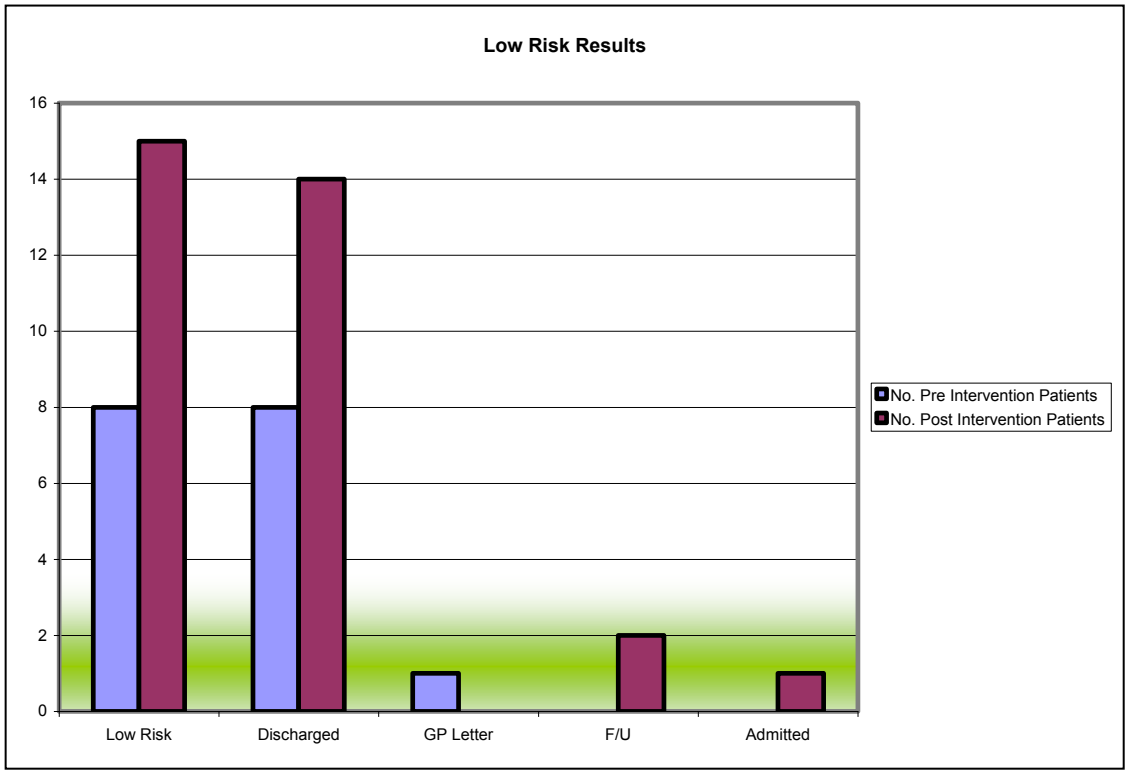
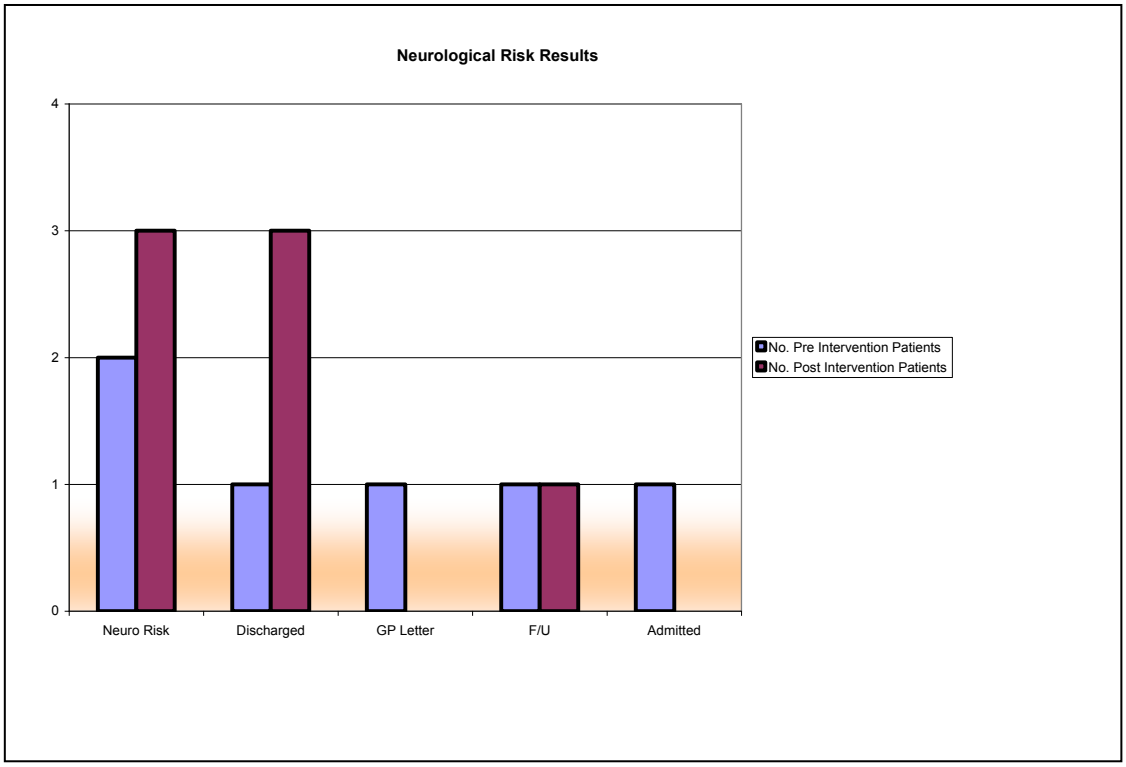
WJMER



***Graph 2**: Comparison method of disposal of intermediate risk patients between pre-intervention (blue) and post-intervention (purple)*



***Graph 3**: Comparison method of disposal of low risk patients between pre-intervention (blue) and post-intervention (purple)*



***Graph 4**: Comparison method of disposal of patients with neurological risks between pre-intervention (blue) and post-intervention (purple)*

Discussion

Full initial assessment was not documented in 100% of patients both before and after the intervention; this information is classed as essential information required to make a correct management and referral judgement and thus should be being gathered.

During the pre-audit there were 4 patients who had not had an ECG. For the purpose of this audit, other risks were assessed and patients were risk stratified accordingly. This resulted in one patient aged 17 being classified as high risk as he was under investigation from Cardiology and awaiting a loop recorder. Two were classed as low risk with no other risk factors (aged 24 and 27). The fourth patient (aged 33) was classified as intermediate risk, at initial ED clerking and then had overnight telemetry and was discharged to be seen with an EEG by Dr Renton in clinic.

During the post-intervention audit 3 patients had no ECG at initial assessment. One aged 28 had TLOC on exertion, thus was classified to high risk. Of the two classified as low risk, one aged 18 was diagnosed as a vasovagal and the second aged 20 was referred to OPD cardiology where the cause thought to be neurally mediated. For the purpose of the following discussion the groups will include those stratified without ECGs.

Within the high risk groups, there were 17 patients pre intervention, 12 were admitted and 9 of these were seen within 24hrs by cardiology, the 3 remaining were managed by medics. For the others appointments varied from one given a cardiology appointment, one an appointment with another consultant and 3 were discharged from ED as they had a prior cardiology appointment for investigation.

In the 12 patients in the high risk post-intervention group 6 were admitted and one to OBS ward overnight. Only 3 were seen by cardiology within 24hrs. One patient was discharged from ED as having a prior appointment for pacemaker check and only one patient's GP was asked to refer to cardiology if they felt it appropriate.

Of the high risk groups there was a 13% decrease in the numbers admitted post-intervention, and of those admitted a 32% decrease in those seen by Cardiology within 24hrs.

Within the intermediate risk group pre-intervention there were 3 patients identified, none were admitted, one syncope clinic referral, one pre-arranged cardiology referral and one discharged no follow up despite an ambiguous diagnosis. There were no intermediate risk patients in the post-intervention group.

Within the low risk group pre-intervention 8 were identified and all 8 were discharged, comments in only one clerking to ask GP to follow up if needed.

For the 15 post-intervention low risk patients 14 were discharged, 12 with no follow up, one had a syncope clinic referral which resulted in a diagnosis of a vasovagal, one had a Cardiology Appointment made. One patient was admitted and went on to have a CT head and LP which were negative.

Of the pre-intervention low risk group there was 100% discharged with no follow up, but only one doctor noted comments for GP in clerking and 93% discharged post intervention, there was also one inappropriate admission and 2 inappropriate clinic referrals.

Within the neurological group 2 were identified pre intervention, one was discharged with no follow up and the second after an overnight AMAU stay with telemetry. That patient had an outpatient EEG requested with follow up with a specific AMAU consultant arranged.

In the post-intervention group 3 patients were identified and discharged with only one appointment made for first fit clinic.

Results post-intervention show a worsening in all areas, with the exception of syncope clinic as there were no patients identified in the intermediate risk group for comparison. This could be for a number of reasons including a lack awareness of the intervention, or lack of availability of the document. The document name would suggest to the user that it is only useful if a syncope clinic referral is to be made, whereas it is actually a useful document for risk stratification and this could be utilized if the user were familiar with it. The results could also be due to inadequate sample size and a failure to catch the specific group of interest. This audit indicates the need for a further targeted intervention, to ensure appropriate, streamlining of the management of patients that present with TLOC.

Interventions that could prove efficacious are the introduction of a TLOC proforma, providing an aide memoir for the correct work up of patients that would lead to accurate risk stratification across all levels and indicate the safest disposal of patients from the ED. This could provide direction and guidance towards appropriate investigations and management; an uncomplicated faint or situational syncope does not need immediate management and can be referred to the GP for further follow up.

Formal interdepartmental teaching should be given on TLOC using the NICE prepared teaching slides together with the introduction to all doctors and ANPs in the use of the proforma. Awareness of the referral process should be raised with posters in the doctors' room and mess areas to highlight the proforma introduction.

Conclusion

The complex results post-intervention show a failure to meet the target in all areas, with the exception of Syncope Clinic where we are unable to comment as there were no patients identified in the intermediate risk group post intervention for comparison.

The need for a full initial assessment should be emphasized to doctors in the acute settings along with mandatory ECG.

A proforma should be implemented as a guide to the most optimal approach in assessing and managing a patient that presents with TLOC.

High risk patients should be admitted and referred for a specialist cardiovascular assessment as standard within 24hrs. Intermediate risk patients discharged for Syncope clinic follow up and low risk discharged with written request for GP follow up if needed. Specialist clinics are available in RLH but are not being fully utilized. This process needs to be more robust and this could avoid costly inappropriate admissions and referrals and prevent unnecessary investigation.

Further teaching on the NICE guidelines and departmental paperwork for TLOC should be introduced followed by a re audit in an attempt to meet the NICE guidance of 100% change current practice.

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Training in cosmetic and reconstructive gynaecology

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Keywords:

Cosmetic and reconstructive surgery, Gynaecology, Post-graduate training

Introduction

Cosmetic and reconstructive gynaecology is an area of obstetrics and gynaecology that is becoming increasingly more widespread; however it is relatively poorly covered during our during medical school and post-graduate surgical training. Although the majority of cosmetic gynaecology is performed privately, there are a number of health boards that perform a limited number of cosmetic operations. Cosmetic gynaecology is currently performed by both plastic and gynaecological surgeons but its role remains controversial. Many gynaecologists feel that cosmetic surgery is a valid option for patients but equally there are gynaecologists who think that cosmetic surgery has no role within obstetrics and gynaecology. One view is that cosmetic procedures performed for non-medical reasons have parallels with female genital mutilation in terms of anatomical changes but also direct and indirect pressures that lead women to undergo these procedures[1].

The American College of Obstetricians and Gynecologists (ACOG) released a policy statement in 2007 describing their concern and opposition to cosmetic procedures becoming medically accepted and routine surgical procedures and also doubted the medical safety and therapeutic efficacy of the procedures[2]. There are increasing numbers of requests from patients for cosmetic procedures and the ACOG recommends a 'frank discussion' should be had with these patients regarding the wide range of normal genitalia. This is supported by a study by Lloyd et al which found a wide variation in genital dimensions among premenopausal women[3]. Despite the differing views, it is important that trainees have a basic knowledge of this area to be able to advise, consent and refer patients appropriately.

Reconstructive gynaecology, although very specialised is having an increasing role in the management of vulval cancer. Most tertiary gynaecology cancer centres have close plastic surgical input to help manage patients requiring extensive resections and reconstructive flaps. Where previous surgery often resulted in long-term psychosexual problems, reconstructive surgery can help restore anatomy and retain function therefore improving a women's quality of life. The surgical techniques used in reconstructive procedures on the female genital tract range from simple procedures involving split-thickness skin grafts to more advanced procedures involving surgical flaps. Although gynaecologists may not be performing these operations an understanding of when reconstructive surgery may be required and plastics involvement is important. In addition the knowledge of post-operative management of surgical flaps is crucial if problems are to be identified early.

Currently training in reconstructive and cosmetic gynaecology is variable within obstetrics and gynaecology and often trainees receive little or no teaching. As a result few trainees feel confident in this area. It is therefore important that trainees receive adequate teaching so that they have the knowledge to manage patients appropriately.

Aims

The aim was to assess the teaching in and exposure to cosmetic and reconstructive gynaecological surgery by Obstetrics and Gynaecology trainees and consultants in Scotland. In addition to determine if trainees and consultants feel the topic is important to their training and would benefit from a teaching package.

Method

A questionnaire consisting of 13 questions was created using online survey software (SurveyMonkey). This questionnaire was sent via email to all obstetrics and gynaecology trainees, consultants, associate specialists and sexual health consultants in Scotland. A total of 435 emails were sent.

Questionnaire	
1. Please state your level of experience –	Consultant O&G □ Consultant Sexual Health □ Associate specialist/staff grade □ ST1-2 □ ST3-7 □ Other □
2. Which Scottish deanery are you associated with:	North □ East □ South East □ West □ N/A □
3. Have you ever had teaching on cosmetic/ reconstructive gynaecology?	Yes □ No □
4. If you answered 'Yes' to the previous question, how many tutorials/teaching sessions did you have?	1 □ 2 □ 3 □ 4 □ >4 □ N/A □
5. I have received teaching on the following: You can select more than one option -	*Cosmetic* - Consent □ Types of procedures □ Risks □ Referral options □ Cosmetic surgery on the NHS □ None of the above □ *Reconstructive* – Consent □ Types of procedure □ surgical flaps and management □ Risks □ None of the above □
6. How often do you see patients in clinic requesting cosmetic gynaecological procedures?	Rarely □ Once a year □ Every 6 months □ Once a month □ Weekly □
7. I am confident in and have adequate knowledge of:	*Cosmetic* – Consent □ Types of procedures □ Risks □ Referral options □ Cosmetic surgery on the NHS □ None of the above □ *Reconstructive* – Consent □ types of procedure □ surgical flaps and management □ Risks □ None of above □
8. Have you seen any procedures in:	*Cosmetic gynaecology* – Yes □ No □ *Reconstructive gynaecology* – Yes □ No □
9. If yes – what procedures have you seen –	Labiaplasty (labial reduction) □ Vaginoplasty (Vaginal tightening) □ Hymenoplasty □ Perineoplasty □ Reconstructive Flaps □ None of the above □
10. Do you know what is involved in:	*Cosmetic gynaecological procedures* – Yes □ No □ *Reconstructive gynaecological procedures* – Yes □ No □
11. Do you feel confident in explaining the procedures and risks to patients in?	*Cosmetic gynaecology* – Yes □ No □ *Reconstructive gynaecology* – Yes □ No □
12. The knowledge of cosmetic and reconstructive gynaecology is important to my training.	Yes □ No □
13. I believe that an online Computer Assisted Learning (CAL) package on cosmetic/reconstructive gynaecology surgery will be/would have been useful to me.	Yes □ No □

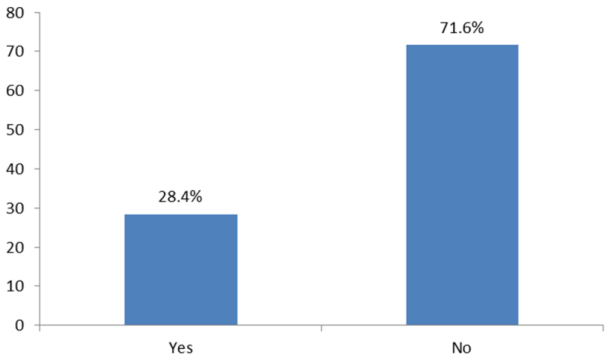
Figure 1: Questionnaire distributed to participants.

Results

We received 119 responses from a possible 435 (27.4%). There were 56 responses from O&G consultants (47.1%), 38 responses from ST3-7 (32.9%), 13 responses from ST1-2 (10.9%), 3 responses from associate specialists (2.5%), 2 responses from sexual health consultants (1.7%) and 7 other responses (5.9%). The other responses included 2 retired consultants, 2 obstetricians only and 3 LATs.

The responses from different Scottish deaneries included 77 from the West (64.7%), 21 from South East (17.6%), 11 from the North (9.2%), 5 from the East (4.2%) and 5 were N/A (4.2%).

Have you ever had teaching on cosmetic/ reconstructive gynaecology?

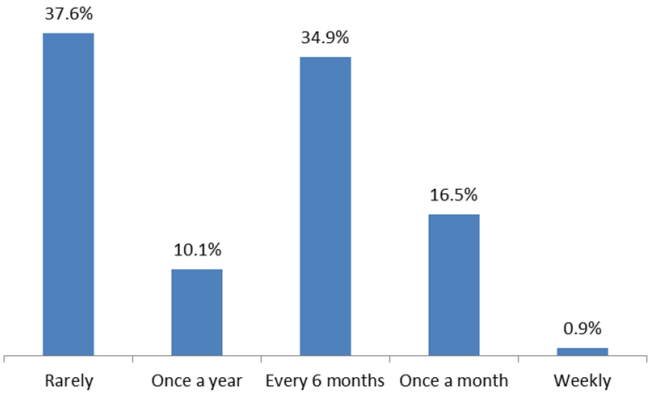


34 respondents (28.6%) had received teaching in cosmetic/reconstructive gynaecology compared to 85 respondents (71.4%) that had never received teaching. The respondents that received teaching, 10.7% had >4 tutorials, 0% 4 tutorials, 3.9% 3 tutorials, 8.7% 2 tutorials and 7.8% 1 tutorial.

The teaching received in cosmetic surgery varied from consent (19.6%), types of procedures (26.2%), risks (28%), referral options (15%), and cosmetic surgery on the NHS (13.1%). In reconstructive surgery 22.6% received teaching on consent, 37.7% on types of procedures, 32.2% on surgical flaps and management and 28.3% on risks.

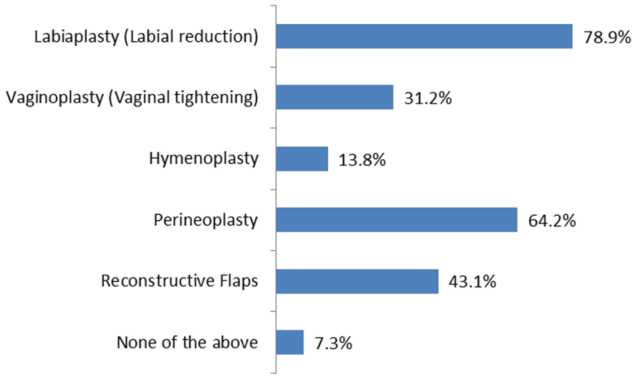
People felt confident and had adequate knowledge in varying areas of cosmetic surgery – consent (38.9%), types of procedures (30.6%), risks (42.6%), referral options (35.2%), cosmetic surgery on the NHS (25.9%), none (42.6%) and within reconstructive surgery – consent (26.6%), types of procedures (25.7%), surgical flaps and management (17.4%), risks (29.4%), none (65.1%).

How often do you see patients in clinic requesting cosmetic gynaecology procedures?



The frequency of patients requesting cosmetic procedures in clinic was rare (37.5%): once a year (9.8%), every 6 months (34.8%), once a month (17%) and weekly (0.9%).

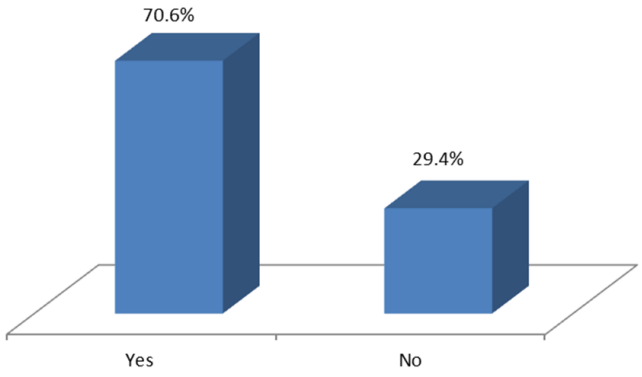
What procedures have you seen in cosmetic/ reconstructive gynaecology?



79.8% of people had seen cosmetic gynaecology procedures and 59.1% had seen reconstructive surgery. The procedures seen included labiaplasty (labial reduction) (79.3%), vaginoplasty (vaginal tightening) (30.6%), hymenoplasty (13.5%), Perineoplasty (64.9%), reconstructive flaps (43.2%) and none (7.2%).

69.7% of people knew what was involved in cosmetic gynaecological procedures and 55.6% felt confident in explaining the procedures and risks to patients and 57.4% knew what was involved in reconstructive gynaecological procedures and 34.6% were confident in explaining the procedures and risks.

The knowledge of cosmetic and reconstructive gynaecology is important to my training



The knowledge of cosmetic and reconstructive gynaecology was felt to be important to their training in 70.3% of all respondents (76% of O&G trainees).

Conclusion

The results of this survey revealed that there is currently limited teaching in obstetrics and gynaecology on cosmetic and reconstructive gynaecology. There was an overall lack of confidence and knowledge in both cosmetic and reconstructive surgery but the majority of people felt that it is an area that is important to their training. Also the majority (67.6%) felt that a computer assisted learning package (CAL) on the topic would be useful and beneficial during their training with 75% of trainees giving positive responses.

A CAL package will be created that will be accessible online to consultants and both O&G and plastic trainees.

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Basic Principles of Electrosurgery and Energized Dissection: Monopolar, Bipolar and beyond

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Keywords:
Electrosurgery, Diathermy, Energized dissection, Monopolar, Bipolar

Introduction

Electrosurgery is an integral part of modern surgery. It has allowed faster operating, reduced blood loss and discovery of newer surgical techniques. Diathermy is the main available technique, using heat generated by electricity to affect the target tissues, and current advances include energized dissection. Safe use of these technologies in theatre requires a basic grasp of their mechanisms of action and potential pitfalls.[5, 7]

Electrocautery vs Electrosurgery

The terms electrocautery and electrosurgery are often confused. Electrocautery is an old system for haemostasis which is now rarely employed. It uses direct current (DC) to generate heat to tip of a metal instrument, thereby causing blood to coagulate. Electrosurgery uses modern instruments that harness alternating current (AC) and transfer this energy to tissues in a variety of ways.[1]

Monopolar diathermy

The first commercial monopolar device was designed by William T. Bovie and famously first used by renowned neurosurgeon Harvey Cushing in 1926.[1] It works by producing heat at an active electrode, as the electric circuit is completed.

The circuit involved can be seen in Figure 1. The energy is supplied by a high frequency AC generator of 100KHz to 4MHz. This high frequency current avoids stimulation of underlying muscles and nerves. The indifferent (or dispersive) electrode is a metal plate with a large surface area that is placed on a flat part of the patient, typically the thigh, buttock or back. It needs to have a large surface area (>100cm^2) to provide a low impedance to current and poor contact can cause burns at the site. The plate must also be placed away from any metal implants to avoid the current passing into this and causing heat damage.[5]

The active electrode has a small surface area for contact with the target tissues; the increased impedance to the current means heat is focused. In monopolar diathermy, the electrode usually takes the form of a metal tip, in the pencil-type devices used in theatres.

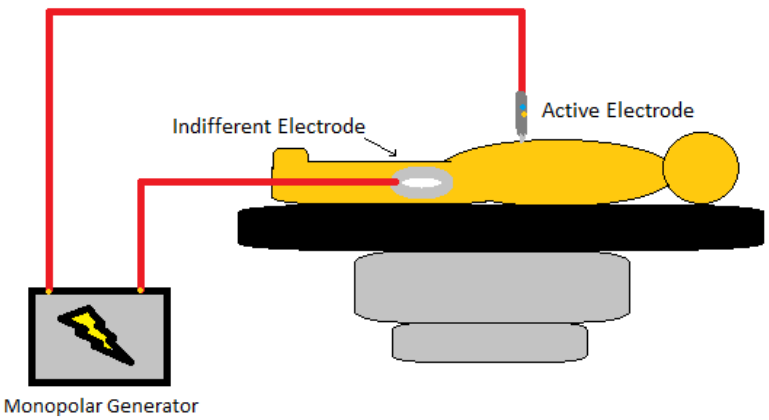

Figure 1*: Illustration of the electricity circuit from a monopolar diathermy*

There are two options in monopolar diathermy: Cut (Yellow) and 'Coag'/Coagulation (Blue).

Cut (Yellow button or pedal)
The cutting action of monopolar diathermy is achieved by a continuous electric current waveform action which vaporises the tissues on contact (see Figure 2). This allows cutting of tissues without coagulation and the effect is similar to being cut with a scalpel. There are studies that suggest skin incision using this diathermy may reduce post-op pain. . The 'Cut' setting sometimes has two settings called 'Pure' and 'Blend' depending on the levels of energy involved.[5]

Coagulation or 'Coag' (Blue botton or pedal)
This uses the same AC current but the waveform is only on 6% of the time (see Figure 2). This allows coagulation of tissues while cutting. 'Coag' can be used directly through the active electrode or through a conducting device such as insulated forceps to direct the coagulation more accurately. As with 'Cut' there are two modes: desiccation (also called 'forced coag') and fulguration ('spray coag').[5]

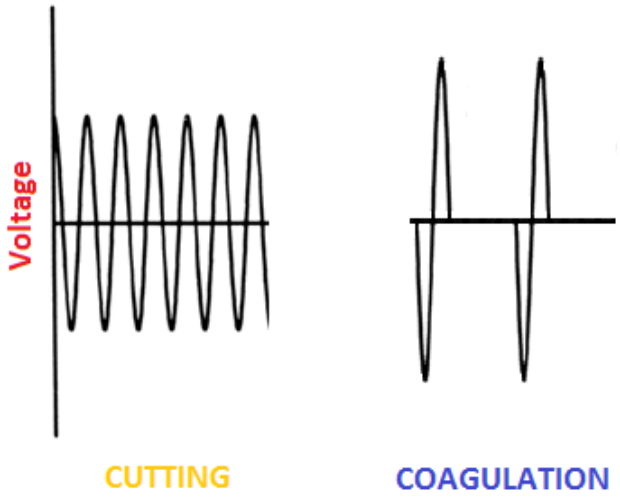

***Figure 2**: Differences in electricity currents between cutting and coagulation mode of diathermy*

Desiccation ('Forced Coag')
This allows more precise coagulation and the electrode needs to be in touch with the target tissue. The voltages are somewhat lower in desiccation mode compared to Fulguration but with slightly higher currents (0.5W vs 0.1W).[5]

Fulguration ('Spray Coag')
This is good for haemostasis and 'sprays' a shower of sparks a few millimetre away from the targeted tissue. It is achieved by using very high voltages (around 6000V) with lower currents. It should be avoided on delicate

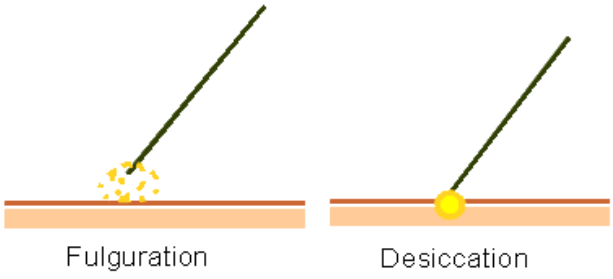

***Figure 3**: An illustration of the different effects between fulgaration and desiccation.*

organs like bowel and near large vessels as the effect is less controlled than desiccation and can cause thermal injuries.[5]. Figure 3 illustrates the effect of both these modes of coagulation.

Precautions
If you are intending to use diathermy, you need to ascertain whether your patient has a pacemaker. If so, a Cardiologist should be consulted and the pacemaker will need to be put on the 'safe mode' during surgery as otherwise the current can damage the device. The plate will need to be applied as far away as possible from the pacemaker. Monopolar diathermy is also contraindicated in some patients with implantable cardio-defibrillators (ICDs) and neuro-stimulators, as these can cause continuous defibrillation or paralysis.[5]

Monopolar diathermy should also never be used on end-arterial organs which include fingers, ears, the nose and the penis. If the main supplying artery is thrombosed, it can result in necrosis and self-amputation.[5]

Risks
There is a risk of surgical fires when using diathermy[3]. The volatile gases and rich oxygen supply in theatres makes fires in theatres particularly dangerous. If using alcohol-based skin preparations, care must be taken to ensure this has fully dried and no pooling has occurred before the current is activated.

There have been concerns regarding the smoke emitted from diathermy, particularly about their potentially carcinogenic properties. However, studies have shown that the contents of the fumes are similar to that of normal city air.[2]

Bipolar diathermy
Bipolar diathermy works via a very simple mechanism to monopolar except the indifferent electrode is also within the hand held diathermy device. This usually takes the form of bipolar forceps, with the electrodes on either side of the forcep jaws. The targeted tissues are held lightly between the jaws, causing coagulation.[5]

Newer haemostatic devices such as the Ligasure® or Enseal® have improved upon the basics of bipolar diathermy to reliably seal vessels as large as 7mm in diameter.[5] These work by controlling the amount of energy delivered to the tissues between the jaws, usually till it is heated to 100°C. These devices are now widely used in General Surgery and Gynecology.[7]

Energised Dissection

This is one of the newer methods of dissection and haemostasis which uses ultrasound. The most commonly used device is the Harmonic® scalpel and it has jaws which are placed around the target tissue. These jaws vibrate at high frequency (55,000 times/ second) which coagulates and cuts the tissue. It can be safely used to seal vessels up to 5mm in diameter.[6]

This method of dissection has revolutionised liver surgery through the use of the Cavitron Ultrasonic Surgical Aspirator (CUSA). The CUSA uses ultrasound to disperse and aspirate cells during liver resection. This allows the surgeon to transect through the liver without cutting the vessels and bile ducts. The bile ducts and vessels remaining are then clipped, cut using spray diathermy or stapled using vascular staplers depending on the size of the vessel. This device is also used frequently in neurosurgery due it to ability to dissect tissues around vital structures safely.[7]

Future

Technology in all fields is continuing to advance and developments in devices capable of dissecting safely with minimal loss promise to provide more precise application of energy sources.

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WJMER

A qualitative evaluation study on the perception and operation of Deprivation of Liberty Safeguards in Old Age Psychiatry teams in Rhondda Cynon Taff and Bridgend in Mid Glamorgan, South Wales

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Keywords:

Qualitative, Old age psychiatry, Capacity, Law, DOLS

Abstract

For residential home or hospital patients suffering from mental incapacity their decision-making position may be undermined further by inappropriate deprivation of their liberty by others. To face these issues and bring greater order in 2008, amendments were made to the Mental Health Act of 2007 and the Deprivation of Liberty Safeguards (DOLS) introduced into the operation of the 2005 Mental Capacity Act were an important and much needed response to the 2001 Bournewood judgement.

25 professional staff from three multidisciplinary Old Age psychiatry community mental health teams (CMHT's) in the Cwm Taff and ABM NHS Trusts were recruited for interview, six of whom were interviewed in a focus group.

DOLS was overwhelmingly perceived as protective for both patients and staff in contexts and circumstances which are frequently open to differing subjective interpretations typically in the difficult area of dementia care. Most professionals had a very good understanding of the principle of capacity, although a clear understanding of deprivation of liberty, the interface between the Mental Capacity Act 2005 and DOLS, and the role of the Bournewood judgement was less common. Training issues (regarding both timing and content) were identified as important for generating awareness, greater procedural clarity and encouraging collaboration and good communication. The role of the DOLS co-ordinator and liaison with senior medical members was identified as key. Local arrangements were more readily quoted than an awareness of the national picture. It was identified however that albeit rigorous procedures in place would operate better if simplified and made less involved .

This study was conducted systematically and objectively, analysis was intentionally pursued with necessary thoroughness and reflexivity.

Recommendations for future practice include the need for further equivalent research efforts in other geographical areas of the UK and for the application of DOLS to be more widespread across certain patient populations.

Introduction

The introduction of the Deprivation of Liberty Safeguards (DOLS) into the Mental Capacity Act (2005) was an important and needed response to the 2001 Bournewood judgement. Yet according to critics, it 'remains ambiguous and the safeguards do not provide clear guidance on the circumstances in which it occurs'. Shah and Heginbotham stated that DOLS has also 'exposed some anomalies and highlighted some difficulties in its implementation and application'. These criticisms appear to concur with the findings of the National Audit of Dementia (2011) which concluded amongst other things, that the scope of DOLS was too limited; its framework was too complex and that the interface between DOLS and the Mental Capacity Act (2005) was too complicated and lacked clarity. In the light of these findings, a qualitative study of the perceptions of DOLS, its effectiveness and utility, was carried out on members of multidisciplinary Old Age psychiatry community mental health teams (CMHTs).

Methodology

The literature review for this study was undertaken using an OVID keyword advanced search of Medline, Embase and Psychinfo electronic databases for journal articles written between 2010 and 2012. The primary keyword search was as follows: (elderly OR old; age OR aged OR geriatric) AND (mental capacity OR deprivation of liberty safeguards OR mental competency OR decision making) AND (nhs OR patients OR psychiatry OR Great Britain OR Wales OR mental health services). Papers were sourced and read with a list of questions for interviewees subsequently compiled. Twenty seven papers were found through this search.

The Cwm Taff NHS Trust ethics committee were approached in September 2011 and no ethical conflicts were found. Cwm Taff

Research and Development Group and DOLS Steering group for Cwm Taff NHS Trust were approached and backing obtained. A consent form consistent with Cwm Taff Research and Development requirements was developed and signed by each person interviewed prior to interview. In between interviews, the electronic recording device was kept securely under lock and key before being formatted. At all times the anonymity of interviewees was maintained.

The study, carried out in the first half of 2012, interviewed twenty five team members, including three consultant psychiatrists, five specialty trainee doctors as well as senior specialist nurses, social workers, occupational therapists and two DOLS assessors. The participants were all members of various multidisciplinary CMHTs in Cwm Taff and Abertawe Bro Morgannwg NHS Trusts. Twenty five individual interviews were carried out, lasting between twenty and thirty minutes, with a wide range of questions being asked such as, 'what is your understanding of the rationale for DOLS?' and 'what changes would you initiate to DOLS if you were able?' In addition to the interviews, a focus group of six participants was also carried out where perceptions of DOLS were discussed and where members could interact and share their knowledge, understanding and acuities.

Most of those who took part in the research had direct and personal professional experience of DOLS, all belonging to teams that were involved in its operation. Thus a combination of 'purposive' and 'snowballing' sampling techniques were employed. The sample was taken from two NHS Trusts in South Wales and was hence a localised study.

Results

The interviews and focus groups demonstrated considerable consensus in the views and perceptions of the participants.

Training

With the exception of an F1 doctor, all of the team members had been provided with specialist DOLS training, although this varied considerably in both its length and quality; foundation trainee doctors (with specific experience of working in a CMHT) having been given the least professional training in this area. Some respondents expressed their dissatisfaction with the training, describing it as 'unhelpful' and 'didactic in nature', while others perceived it to be 'informative', 'interactive' and 'very useful'. A number of members also complained about a lack of follow-up training and stated how useful this would have been. They also noted that they would have preferred a more holistic approach so that they had a greater understanding of how DOLS may affect all those involved in the process.

Perceptions of DOLS

Overall interviewees demonstrated good knowledge and understanding of the principle of capacity. Less good was their knowledge and understanding of DOLS, the interface between DOLS and the Mental Capacity Act and the Bournewood judgement.

It was generally considered that DOLS empowered people when the vulnerable person 'needs somebody to speak up for them'. It encouraged deeper thinking, as well as providing transparency, clarity and focus. Respondents were positive about the way that it encouraged assessments to be increasingly methodical and more clearly justified. Both a Consultant and a DOLS assessor commented that it was in place 'to fill the Bournewood gap' while a senior nurse saw DOLS as 'part of the shift in how people without capacity are considered'. She noted that this involved a rethink of the 'paternalistic - we know best- sort of attitude'. A social worker perspicaciously commented,

'There are two ways in which liberty can be taken away – via a judge and via mental health services and this has been a paradigmatic shift. This is the paramount thing about DOLS as it prevents a blanket policy that because they have a diagnosis, patients should therefore be deprived of their liberty.'

When asked about the perception of DOLS within their teams, including its rationale and operation, there was a very mixed response. Whereas one participant said of their team, 'we don't have a practicable working knowledge of it', a different participant conversely said of a different team that 'we have a very good perception of it and have lots of resources'. A Community Psychiatric Nurse felt 'most people within the community team understand what it involves and why it is there but do not have much on the ground experience of it or actual practical working knowledge of it'. If such variation exists within two NHS Trusts, the disparity in perceptions at a national level is likely to be even more severe.

There was also divergence in respondents' perceptions of whether or not DOLS was user-friendly. While some members commented that its impact had been relatively minimal and had not led to the huge burden of work that had been expected, others noted how panic and over-zealousness had initially set in in response, which was only recently beginning to subside. Its user-friendliness was particularly criticised by consultants, with one describing it was 'unyieldingly long and involving a lot of work' with another suggesting that it was 'too long, fussy and repetitive'.

The Operation of DOLS

There was almost universal consensus that in its operation, DOLS contained scope for personal interpretation. This was seen positively in many cases as it provided the needed flexibility. One respondent noted that when dealing with human beings, 'it cannot be mechanical and objective; there will always be an element of the subjective'. It was also said that 'when dealing with dementia, there will always be an element of interpretation as to why people are behaving in a particular way'. Nevertheless, it was generally observed that greater uniformity in interpretation was beginning to emerge and that there is currently less personal interpretation of DOLS than had been the case immediately after its inception.

When asked about the interface between DOLS and the Mental Capacity Act (2005) many respondents struggled to articulate an answer, with one consultant stating that he had never considered this before. Perhaps the most sagacious of answers was given by a specialty doctor who observed that for her, 'the Mental Capacity Act was theoretically only determining someone's capacity to make decisions for him or herself, but gave no direction'. In contradistinction, DOLS 'extends this to bring in a practical framework on the ground to protect rights when people are deemed not to have capacity involving best interest decisions.'

For some staff the increase in workload was worthwhile as the robust risk assessments were effective. For others the process was time-consuming and bureaucratic, with a more streamlined approach needed. It was generally agreed that the DOLS co-ordinator was important in keeping everyone on track.

Overall, those who participated in the study were generally positive about DOLS, believing that it added greater transparency and enabled external scrutiny. One consultant summed up the general sentiment of respondents by saying that 'DOLS had done what it was set up to do'.

Clinical Implications

Although in many senses, DOLS has appeared to achieve a measure of success, a number of important recommendations were suggested by respondents which could have helpful clinical implications.

Perhaps the most pressing changes which need to be made involve the simplification and streamlining of procedure. In practical terms this may mean fewer professionals being involved and greater clarification of the processes.

Concern was frequently raised about the limited applicability of DOLS and the need for it to cover vulnerable people in the wider community. Even within hospitals and residential care homes, special attention is needed to ensure that 'friendless patients' do not miss out in the process. The extent of this need and how it could be covered by DOLS are areas where further consideration is required.

If cognisance and appreciation of DOLS developed, then it would be used more frequently and applied more effectively. In many senses, DOLS offers positive protection for patients and staff, but the full impact of this will only occur when team members have greater familiarity and grasp of the knowledge base fostering better understanding of this important piece of legislation. Consideration of the implications of the use of DOLS, on a day-to-day level, relating to all those involved in the multidisciplinary process, whether it be patient, family member, consultant or social worker, is important.

Overall this study demonstrates that DOLS has been a welcome amendment to the Mental Capacity Act (2005) and had positive implications on clinical practice in Mid Glamorgan. It has become an integral part of the way that vulnerable people are protected and this is recognised by the whole spectrum of those involved with DOLS's implementation. Nevertheless, there is undoubtedly room for improvement and now that many of the teething problems have been eradicated and practitioners and policy-makers have allowed the dust to settle, it is perhaps time for a major assessment of DOLS's effectiveness, with the view to making the necessary and needed improvements, some of which have been highlighted by those involved in this particular study.

Recommendations: The findings from this small-scale, qualitative study highlight insightful trends in perceptions and experiences although there are probable limitations on the generalisability of these results nationally. There is a need for further research in this area including national qualitative evaluation studies of both the perceptions and operational effectiveness of DOLS taking place in the near future.

FIGURE 1: Main Research Questions

1. What DOLS training have you had? What was involved? What was your view of the DOLS training?
2. What is your understanding of the rationale for and operation of DOLS?
3. How do your team colleagues understand the rationale and operation of DOLS?
4. How user friendly are DOLS for you in your professional capacity?
5. Is there any scope for personal interpretation in DOLS?
6. What is the interface between DOLS and the 2005 Mental Capacity Act?
7. What do you think of the procedure and degree of involvement of DOLS assessment?
8. Are vulnerable people excluded from the protection of DOLS in your view?
9. What is your overall assessment of the effectiveness of DOLS?
10. What changes would you institute to DOLS if you were able to?

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Question: 1

THEME: BLOOD TRANSFUSION

OPTIONS:

A. Anaphylaxis
B. Acute haemolytic transfusion reaction
C. Allergic reaction
D. Bacterial contamination
E. Fluid overload
F. Iron overload
G. Hepatitis C
H. Hypocalcaemia
I. Non-haemolytic febrile transfusion reaction
J. Post-transfusion purpura
K. Transfusion-related acute lung injury (TRALI)

From the OPTIONS above choose the most likely complication that has developed in each clinical scenario described below. Each answer may be used once, more than once, or not at all.

QUESTIONS:

1. A 29-year-old woman admitted to the gynaecological ward is receiving an elective blood transfusion for symptomatic anaemia secondary to menorrhagia. Nearly 45 minutes after her transfusion was commenced, her temperature rises to 38.7º C and she is shivering. Her pulse rate is 76/min and her blood pressure is 122/84 mmHg. Her breathing is normal with a respiratory rate of 14 breaths/min.

2. A 55-year-old woman admitted to the Orthopaedic ward following a total hip replacement is receiving a post-operative blood transfusion since she has got low haemoglobin. Nearly an hour after commencing the transfusion, she complains of shortness of breath and difficulty breathing. On examination, she appears cyanosed with swelling of her face and tongue. Her temperature is 36.8º C, pulse rate is 98/min and she has got an audible wheeze.

3. A 47-year-old man admitted to the surgical admission unit with Class III shock secondary to an RTA complains of chest and abdominal pain soon after starting an emergency blood transfusion. He appears agitated and flushed. His temperature is 41.8º C, pulse rate is 102/min and blood pressure is 94/74 mmHg.

4. A 78-year-old man with moderate per rectal bleeding secondary to suspected bowel cancer is receiving his fourth unit of blood as part of his pre-operative optimisation. He now complains of progressive difficulty in breathing. His temperature is 37.2º C, pulse rate is 76/min but his oxygen saturation has dropped to 87% on air. On examination, his JVP is raised and bilateral basal crepitations are heard on auscultation.

5. A 25-year-old man of Afro-Caribbean origin who has had numerous hospital admissions and blood transfusions for sickle cell crises presents to his general practitioner with progressive tiredness, painful joints and some pigmentation in his skin. Blood biochemistry reveals deranged liver function tests including elevated alkaline phosphatase (ALP) and alkaline transaminase (ALT) levels. A routine urine dipstick reveals the presence of glucose.

EXPLANATION:

QUESTION 1: The clinical findings in this patient are suggestive of non-haemolytic febrile transfusion reaction. This is because this patient has got a temperature of less than 40ºC and has shivers but all other physiological parameters are normal.

QUESTION 2: This patient has got an anaphylactic reaction to blood transfusion. Such patients present with oedema of tongue, cyanosis, bronchospasm and difficulty breathing, and tachycardia. Transfusion should be discontinued if patient develops anaphylaxis. The patient should immediately be appropriately resuscitated and treated. This consists of administering high flow oxygen, securing intravenous access, and administration of an anti-histamine agent (e.g., chlorpheniramine maleate) and a steroid (e.g., hydrocortisone). Adrenaline may be indicated in some patients.

QUESTION 3: This patient has all the signs and symptoms suggestive of an acute haemolytic transfusion reaction (temperature greater than 40ºC, chest and/or abdominal pain, tachycardia, hypotension, agitation and flushing). Acute haemolytic transfusion reaction may be caused due to ABO incompatibility. Transfusion should be stopped immediately. The patient should be appropriately resuscitated and treated.

QUESTION 4: The signs and symptoms in this patient are suggestive of pulmonary oedema due to fluid overload. This can occur if the patient is transfused rapidly or receives large volumes of blood in a relatively short period of time. This typically occurs in elderly patients who may have concurrent medical problems such as a compromised cardiac status, hypertension or renal dysfunction. The features of pulmonary oedema, amongst others, include shortness of breath, a raised JVP, bibasal crepitations and a drop in oxygen saturation.

QUESTION 5: This patient is manifesting the symptoms of iron overload (secondary haemochromatosis) which has developed as a result of repeated blood transfusions for the sickle cell crises. Secondary haemochromatosis may occur in any haematological condition where the patient has received repeated blood transfusions (usually more than 40L in total). Features of haemochromatosis include tiredness, arthralgia, abnormal LFTs, diabetes mellitus, signs of chronic liver disease, bronze skin pigmentation, dilated cardiomyopathy and hypogonadism.

ANSWERS: 1 – I; 2- A; 3 – B; 4 – E; 5 – F

Question: 2

THEME: DATA INTERPRETATION

OPTIONS:

A. Metabolic acidosis
B. Metabolic alkalosis
C. Acute Respiratory acidosis
D. Chronic respiratory acidosis
E. Respiratory alkalosis
F. Type I respiratory failure
G. Chronic renal failure
H. No abnormality
I. Type II respiratory failure

Select the correct category from the list of OPTIONS above for each arterial blood gas result mentioned below. The results have been obtained with the patients' breathing room air. Measurements are in kPa.

QUESTIONS:

1.	pH 7.36	PaO2 7.7	PaCO2 4.1	HCO3 26 mmol/l
2.	pH 7.32	PaO2 9.6	PaCO2 9.0	HCO3 35 mmol/l
3.	pH 7.21	PaO2 13.2	PaCO2 3.5	HCO3 15 mmol/l
4.	pH 7.53	PaO2 14.9	PaCO2 3.5	HCO3 22 mmol/l
5.	pH 7.24	PaO2 7.5	PaCO2 8.3	HCO3 25 mmol/l

EXPLANATIONS:

QUESTION 1: The pH and HCO3 are normal. However, the PaO2 and PaCO2 are both low. This is Type I respiratory failure, which is defined as hypoxia (PaO2 < 8.0 kPa) with a normal or low PaCO2.

QUESTION 2: The PaCO2 is high, and the elevated bicarbonate shows that there is metabolic compensation for the respiratory acidosis. Hence the pH is only slightly low. This picture is typical of a chronic respiratory acidosis. Some causes for chronic respiratory acidosis include conditions secondary to neuromuscular disorders (such as myasthenia gravis), cerebral tumours, COPD and conditions causing decreased chest wall movement (such as ankylosing spondylitis).

QUESTION 3: The acidosis here is due to a metabolic cause, as the bicarbonate is low. It is partially compensated by hyperventilation, leading to a low PaCO2. Some causes of metabolic acidosis include lactic acidosis, ketoacidosis (diabetic or alcoholic), renal failure, renal tubular acidosis, ureterosigmoidostomy, overdose with drugs such as salicylates, acetazolamide therapy, excess acid intake (TPN etc) and bicarbonate loss (diarrhoea, fistulae etc).

QUESTION 4: This alkalosis is respiratory in origin as the PaCO2 is low and the HCO3 is normal. Respiratory alkalosis can be caused by conditions that stimulate the respiratory centre such as CNS disease (encephalitis), hypermetabolic state (sepsis, fever), vigorous exercise and hypoxia (pneumonia, pulmonary oedema etc), or by excess mechanical ventilation by the patient (anxiety causing hyperventilation or due to drugs such as aspirin) or by the ventilator (erroneous ventilator settings).

QUESTION 5: The pH is low, with a high PaCO2 and normal bicarbonate. This is an acute respiratory acidosis. There has been no time for metabolic compensation to occur. Some causes of acute respiratory acidosis include depression of respiratory centre due to CVA, drugs (narcotics or sedatives) and encephalitis, decreased chest wall movement due to trauma or surgery, and pulmonary diseases such as pneumonia.

ANSWERS: 1-F; 2-D; 3-A; 4-E; 5-C

SINGLE BEST ANSWER QUESTIONS

THEME: Applied Physiology

Question 1:

Which among the following is not a recognised process during angiogenesis in wound healing?

Options:

A. Proteolytic degradation of the parent vessel basement membrane
B. Recruitment of fibrocytes to the wound site
C. Migration of endothelial cells towards the angiogenic stimulus
D. Proliferation of endothelial cells behind the leading front of migrating cells
E. Maturation of endothelial cells with organization into capillary tubes

Explanation:
Angiogenesis or neovascularization refers to the formation of new blood vessels from pre-existing vessels at the site of injury. Four general steps are recognised during this process: (i) proteolytic degradation of the parent vessel basement membrane, allowing formation of a capillary sprout; (ii) migration of endothelial cells towards the angiogenic stimulus; (iii) proliferation of endothelial cells behind the leading front of migrating cells; and (iv) maturation of endothelial cells with organization into capillary tubes. Several factors induce angiogenesis including, vascular endothelial growth factor, tumour necrosis factor - alpha, platelet derived growth factor, basic fibroblast growth factor and transforming growth factor - beta. Angiogenic capillary sprouts invade the fibrin/fibronectin-rich wound clot and within a few days organize into a microvascular network throughout the granulation tissue. Fibrocytes, which play a role in the formation of extracellular matrix and contribute to the myofibroblast population in the wound, do not play a role in angiogenesis.

THEME: APPLIED ANATOMY

Question 2:

Which artery among the following arteries is not a branch of the External Carotid Artery?

Options:

A. Facial artery
B. Lingual artery
C. Ascending pharyngeal artery
D. Posterior auricular artery
E. Inferior thyroid artery

Explanation:
The branches of the external carotid artery in the neck are the superior thyroid artery, lingual artery, facial artery, occipital artery, posterior auricular artery and the ascending pharyngeal artery. Behind the parotid gland the external carotid artery divides into maxillary artery and superficial temporal artery. The inferior thyroid artery is not a branch of the external carotid artery but arises from the thyrocervical trunk, which arises from the first part of the subclavian artery. The other branches of the thyrocervical trunk include the suprascapular artery and the transverse cervical artery.

THEME: Applied Physiology

Question 3:

Which among the following statements regarding coagulation is incorrect?

Options:

A. The extrinsic pathway is initiated by the release of tissue factor that is expressed on the surface of injured cells
B. Thrombin acts to convert fibrinogen to fibrin fibres
C. Mutation in the gene coding for clotting factor V can lead to an increase in the clotting time
D. Vitamin K is required for factor VII synthesis by the liver
E. Prothrombin time (PT) is used to monitor treatment with Warfarin

Explanation:
There are two distinct pathways in the coagulation cascade – the intrinsic and the extrinsic pathway. The coagulation cascade comprises of enzyme precursors, primarily synthesised in the liver, which are converted to their active form (denoted by 'a') by the previous factor in the cascade. This has an amplification role, in that each step stimulates a greater amount of active factor in the next. In the extrinsic pathway, tissue factor, a glycoprotein expressed on the surface of injured cells, stimulates conversion of factor VII to VIIa. The intrinsic pathway is initiated by damage to the endothelial surface caused due to exposure of collagen fibres in the basement membrane. Both the intrinsic and extrinsic pathways activate the common pathway of coagulation, which begins with conversion of factor X to Xa. This converts pro-thrombin to thrombin. Thrombin acts to convert fibrinogen to fibrin fibres, which cross-links to form a fibrin clot. There are a number of factors which limit clot formation. Firstly, clotting factors are removed from the area through the circulation of blood. Secondly, anti-thrombin forms stable complexes with clotting factors, inactivating them. Thirdly, Protein C is activated by formation of thrombin and, acting with its co-factor Protein S, it inhibits up-stream activation of clotting factors, inhibiting further thrombin formation. A specific point mutation in the gene coding for coagulation factor V (Leiden mutation) is associated with resistance to degradation by activated protein C, and is thus associated with an increased risk of thrombosis (NOT clotting time!). The Prothrombin Time is used to test the extrinsic pathway. Factor VII synthesis in the liver requires vitamin K, which is antagonised by Warfarin. Thus prothrombin time can be used to monitor treatment with warfarin (APPT is used to monitor treatment with heparin).

ANSWERS: 1 - B, 2 - E, 3 - C

Image-based Medical Quiz

Image: I

Questions:

A 60-yr-old woman presents with a 2-year h/o of ulceration over her right medial malleolus

1. What five pertinent questions would you ask?

2. What is the most likely diagnosis?

3. Name some differential diagnoses.

4. How would you manage this patient?

Answers:

1.
a Duration
b Progression / Exacerbating or remitting factors
c Associated pain
d History of trauma
e Past history of DVT and/or varicose veins

2.
a Venous ulcer

3.
a Arterial ulcer
b Pressure ulcer
c Diabetic ulcer

4.
a Rest
b Elevate
c Control infection
d Moisturise
e Appropriate dressing
f Compression bandage (single most important)

Image-based Medical Quiz

Images: II

Question:

These are the legs of patients with venous hypertension/venous ulcer. Name these conditions.

Answers:

A - Haemosiderin deposition
B - Lipodermatosclerosis
C - Atrophic blanche
D - Inverted 'Champagne bottle' leg

Image-based Medical Quiz

Questions:

A 59-yr-old man presents with a 6-month h/o ulceration over the anterior aspect of his ankle

1. What is the most likely diagnosis?

2. What skin/nail changes would you expect in a patient with arterial disease?

3. What history will you focus on?

4. Name some modifiable risk factors for arterial disease.

Answers

1.
a Arterial ulceration

2.
a Dusky, shiny skin
b Loss of hair
c Brittle nail / opaque nail
d Loss of nail
e Venous guttering
f Cool to touch

3.
a Smoking
b Systemic arterial disease
c Intermittent claudication
d Rest pain
e Other sites of ulceration

4.
a Hypertension
b Smoking
c Hyperlipidaemia
d Diabetes
e Obesity

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