Charges for scoring systems may change practice

Much medical knowledge is copyrighted, but charges to reproduce clinical scoring criteria such as the Mini Mental State Examination may see them disappear from guidelines, writes **Hugo Farne**

A small but important change is quietly taking place in academic publishing, to the detriment of authors and readers alike.

The National Institute for Health and Care Excellence (NICE) recommends using the Wells score to assess patients with a suspected pulmonary embolus, for example, and it recommends the CHA_2DS_2-VASc score to identify which patients with atrial fibrillation are at high risk of stroke and should start prophylactic anticoagulation. However, if you wish to publish an article, book, smartphone application, or website that reminds readers of these scoring systems, it will cost you dearly—as much as $750 (£486; €690) goes to the *Annals of Internal Medicine* for the Wells score and $360 to the journal *Chest* for the CHA_2DS_2-VASc score (see table). Even publicly funded bodies are charging: NICE told me that it would charge £75 a time for items reproduced from its guidelines.

Payment of royalties

Scoring systems are increasingly used because of their incorporation in guidelines and their availability on smartphone applications and websites. In theory at least, reproduction of these scoring systems demands payment of royalties.

As joint authors of an educational book for medical students, my coauthors and I were keen to familiarise the next generation of doctors with the more commonly used scoring systems. However, we had to remove some established ones, such as the Wells score, from the second edition because of the exorbitant cost involved.

Royalties for reproduction: room for improvement

For similar reasons, the Mini Mental State Examination (MMSE)[8] has been replaced by less well known and less well validated alternatives in core textbooks: the 2007 edition of the best selling *Oxford Handbook of Clinical Medicine* removed the MMSE, adding a note to say that it was "now subject to copyright owned by PAR [Psychological Assessment Resources]."[9]

Anecdotally, this may also have affected clinical practice. Colleagues in neurology tell us that the MMSE is no longer used even in memory clinics at the National Hospital for Neurology and Neurosurgery, a tertiary hospital in London. It seems likely that guideline drafting bodies such as NICE will ultimately follow suit.

Journals have been under substantial financial pressure for some time. Increasing competition from an ever expanding number of titles—when previously the bulk of article citations were accounted for by a few papers in the top journals[10]—and falling library budgets have been met with rises in subscription charges in excess of inflation (the "serials crisis").[11] Aggressively pursuing publishers who quote their content, particularly scoring systems that are often reproduced, can provide additional revenues for journals.

Intellectual property

It is only right that journals should seek to protect the intellectual property of their authors against plagiarism. However, scoring systems were intended to be used as widely as possible. By charging such high fees, these scoring systems will inevitably be less widely read and used, much as articles incurring a subscription charge are cited less often than open access articles.[12]

The UK General Medical Council's guide *Good Medical Practice* states that doctors must provide treatments based on "the best available evidence." We are, by extension, compelled to ensure that the best evidence is as "available" as possible. Readers and subscribers should demand that journals make reproduction of scoring systems free (or at least cheap), and authors of new scoring systems should choose journals committed to this. If publishing scoring systems continues to come at such a high cost, it will be patients who ultimately pay the price.

Hugo Farne is specialist registrar and academic clinical fellow in respiratory medicine, Imperial College London, St Mary's Hospital Campus, London W2 1NY
hugo.farne@gmail.com

Cite this as: *BMJ* 2015;351:h4325

Costs of reproducing scoring systems

Scoring system	Journal (publisher)	Fee to reproduce one figure or table ($)		
		Textbook*	Conference or presentation**	Website**
TIMI score[1]	*JAMA* (American Medical Association)	1000	600	600
CAGE questionnaire[2]	*JAMA* (American Medical Association)	1000	600	600
Wells score for pulmonary embolism[3]	*Annals of Internal Medicine* (American College of Physicians)	750	375	125
Light's criteria[4]	*Annals of Internal Medicine* (American College of Physicians)	750	375	125
Pneumonia Severity Index (PSI)[5]	*New England Journal of Medicine* (Massachusetts Medical Society)	616.88	Requires publisher review	Requires publisher review
CHA_2DS_2-VASc[6]	*Chest* (American College of Chest Physicians)	360	90	270 (for 7-12 months only)
HAS-BLED[7]	*Chest* (American College of Chest Physicians)	360	90	270 (for 7-12 months only)

* Published in English; worldwide circulation of 5000.
** For a physician or academic to use untranslated materials in electronic format only with a worldwide audience.

CONSULTANT COVER Martin McKee

Would seven day working save 6000 lives a year?

The UK government's claim turned out to come from a single study that shows nothing so simple

On 16 July 2015, Health Secretary Jeremy Hunt used BBC Radio 4's *Today* programme to warn the British public that "we have about 6000 avoidable deaths every year in the NHS" and that "lack of senior consultant cover at weekends is one of the critical points."[1]

But it subsequently emerged that only one of more than 4000 consultants has opted out of weekend working.[2] And we do not know whether excess mortality is a consequence of lower quality of care or of some difference in case mix comparing weekend with weekday admissions. The evidence underpinning Hunt's claim has received too little attention.

One reason for the lack of scrutiny was that the Department of Health did not disclose the evidence. The BBC reported, "The 6000 figure . . . that was used by the government was from research that has yet to be published."[3]

Hunt did refer to a paper published in 2012,[4] but only as background. Consequently, it was a surprise when, on 13 August 2015, in response to freedom of information requests I made, the department said that Hunt's comments had indeed been based on the 2012 paper; the "yet to be published" research received no mention.[5] We now know that the new study that the Department of Health was referring to is an updated analysis by the same authors that is published in this issue of *The BMJ*,[6] but this was not available to anyone seeking the evidence base at the time the policy was announced, contrary to the code of practice for official statistics.[7]

What did it show?

Selective extraction from the 2012 paper does support one part of Hunt's statement. If the death rate could be brought down to that seen among patients admitted on a Wednesday there would be fewer deaths because the 30 day mortality rate is 11% higher among those admitted on Saturdays and 16% higher on Sundays.

But what about people who are already in hospital at a weekend? They had a significantly reduced risk of dying on a Saturday (5% less) and Sunday (8% less). This is presumably because fewer major procedures are taking place, consistent with the observation that mortality often falls when doctors go on strike.[8] The simplistic solution to stop major surgery on a few more days each week has obvious flaws.

The situation is further complicated by the observation that patients admitted on a Sunday who are not emergencies have a 62% greater risk of dying in the next 30 days than those admitted on a Wednesday (95% confidence interval 50% to 75%). This may be an example of "confounding by indication,"[9] with patients who are at greatest risk admitted early to prepare them for elective surgery. .

Then there is the matter of attribution. The health secretary describes the excess deaths as "avoidable" and links them to his perception of a lack of consultant cover at weekends. This may be the case for some deaths, but there are many other possibilities. The most obvious is that patients admitted as emergencies at weekends have been clinging on for several days in their own homes or in residential care.[10] It is also possible that the onset of the weekend, when community support services may be difficult to access, may influence the decision by general practitioners to refer for admission or by families to take the patient to an emergency department.

The observation that a change to seven day working in stroke services does not necessarily reduce mortality does not help to resolve the issue.[12] A study of 103 English stroke units found no better 30 day mortality outcomes in units with consultant rounds seven days a week than in those with fewer. It did find a dose-response relation with registered nurse staffing levels at weekends, suggesting that the answer may lie other than with consultants.[13]

> The health secretary describes the excess deaths as "avoidable" and links them to his perception of a lack of consultant cover at weekends. This may well be the case for some deaths, but there are many other possibilities

What would it cost?

Many parts of hospitals, such as emergency departments and intensive care units, already work 24 hours a day, seven days a week. There may be other parts that should, but which ones and with what consequences for the rest of the hospital or, more likely, the configuration of hospital networks? Given the challenges of rapidly expanding the consultant workforce, as well as the specialised support that consultants require, staffing levels will inevitably be reduced at other times in the week. And at a time when the NHS faces unprecedented financial pressure, what would seven day working cost? One study suggested that it would exceed the guidelines on cost per quality adjusted life year (QALY) applied by the National Institute for Health and Care Excellence by a factor of between 1.5 and 2.4, or between £339m (€416m; $520m) and £831m a year.[14]

The updated analysis in the accompanying paper suggests that the increase is real but, crucially, the authors note "to assume that they are avoidable would be rash and misleading" and suggest a range of possible explanations.[6] Given the changing nature of medicine some changes to working patterns are probably necessary, but it would be useful to have a better understanding of the reasons for any increase in deaths at weekends, details of what is being proposed, and evidence to justify any changes.

EDITORIAL, p 7
FEATURE, p 14
ANALYSIS, p 16

Martin McKee is professor, London School of Hygiene and Tropical Medicine, London, UK
martin.mckee@lshtm.ac.uk

Cite this as: *BMJ* 2015;351:h4723

NO HOLDS BARRED Margaret McCartney

Blaming doctors won't cut antibiotic overuse

"Doctors write 10 million needless antibiotic prescriptions a year," was the *Guardian*'s headline,[1] and Mark Baker, director of clinical practice at the National Institute for Health and Care Excellence (NICE), told the BBC that some doctors are a "soft touch" and that "ultimately, if they fail to fall into line, there is always recourse to the professional regulator."[2]

Furthermore, NICE said, "If successfully implemented, NICE's guidance could help to reduce inappropriate prescribing by 22%—accounting for 10 million prescriptions,"[3] which led to the *Guardian*'s headline.

I am all for reducing overdiagnosis and overtreatment. I'm chair of the Royal College of General Practitioners' overdiagnosis group. I should be delighted that an influential organisation is keen to reduce iatrogenic harm. But this media coverage has been a disaster.

Where is the evidence that doctors write 10 million unnecessary antibiotic prescriptions a year? NICE told me that the figure was an estimate based on expert opinion from an adviser to the Department of Health, Mike Sharland. When I spoke to him, he told me that it was not a figure that he recognised. It was not in NICE's press release, either; but it was included at a press conference that NICE held to publicise its new guidelines, and it was published in public relations material on NICE's website. I'm willing to think that we can reduce antibiotic prescriptions—but hype of any kind is bad practice.

In any case, raw data do not tell us which antibiotics were unnecessary. We are being asked to prescribe more antibiotics in different populations—for example, regular azithromycin in people with chronic obstructive pulmonary disease. And I'm aware of the tensions that come from a patient who says, "I'm an expert in me," as well as the public reviews that people can leave about the NHS and how "refusal" to prescribe antibiotics can be perceived.

It's easy to prescribe antibiotics. It takes time, energy, and trust not to do so.[4] This is about culture, and this culture needs first to be understood. NICE's handling of the media can do real world damage. Do we want patients to conclude that the reason for not prescribing antibiotics is not because they are useless but because doctors are afraid of being struck off? We should be honest, share uncertainties

It's easy to prescribe antibiotics. It takes time, energy, and trust not to do so

with our patients, explain when antibiotics are unlikely to help, relax the NHS culture of "earlier is better" for minor illnesses,[5] and get better knowledge into common currency—for example, viral coughs last for weeks.

How wonderful it would be if NICE had said, "Prescribing antibiotics is hard to get right. We want to support doctors and patients to reduce low value prescribing. Even careful, cognisant doctors are sometimes going to get it wrong, but this is a risk we think is worth taking. Doctors, we will help you get more time to talk with your patients about the things that are important to them. We have your backs."

Margaret McCartney is a general practitioner, Glasgow
margaret@margaretmccartney.com
Follow Margaret on Twitter, @mgtmccartney

Cite this as: *BMJ* 2015;351:h4697

BLOG Tim Ballard

Will a tax on sugary drinks work?

Channel 4 recently aired a documentary by Jamie Oliver called *Jamie's Sugar Rush*. After his successful advocacy aimed at improving the nutritional quality of school meals he has now moved his attention to the obesity epidemic and, in particular, the role of sugary drinks. In addition to obesity the documentary aimed to raise awareness of the thousands of children undergoing dental extractions under general anaesthesia each year within the NHS as a consequence of sugar filled soft drinks.

At the heart of Oliver's campaign is the levying of a voluntary sugary drink tax in restaurants. Throughout my career I've been concerned by the desire of successive governments to place doctors in the front line to deal with the consequences of lifestyle choices, long believing that the pen in the hand of a legislator is mightier than the pen and the prescription pad. Obesity is increasing across all Western countries, where the environment has become increasingly obesogenic. Alongside climate change and antibiotic resistance the impact of obesity on the health of individuals and populations is the

The impact of obesity on the health of individuals and populations is the defining health issue of our age

defining health issue of our age. I appreciate that the politics of food is complex, and there seems to be little appetite for politicians of any persuasion to take difficult decisions. This is why we need pressure and advocacy as exemplified by Oliver.

Our council at the Royal College of General Practitioners (RCGP) recently discussed a position paper on nutrition. The RCGP fully support the view expressed in the *Five Year Forward View*. What came out of this debate loud and clear was a clear view that the medical profession should not allow itself to be held up as the solution to the obesity epidemic. The use of general practice to identify those with "pre-diabetes" and use an already scarce health resource to deliver lifestyle advice to try to head off the development of diabetes is a case in point. GPs do however have an important role in helping individuals to understand the holistic impact of obesity on their health and to help them with prioritising interventions.

The related public health issues—highlighted by Simon Stevens' clarion call for better prevention of ill-health in his *Five Year Forward View* paper requires strong policy and nationally coordinated action (which the RCGP is committed to calling for and supporting).

So what of the proposed self imposed sugary drinks tax? Bring it on—let it serve as an example to our politicians and give them the courage they need to take action themselves. What of the money raised? To invest it in medicine and medical interventions must be resisted. It would reinforce the notion that this is where the solution lies. Spend it on education of the young and free drinking water fountains instead—this is where the solutions lie.

Tim Ballard is the vice chair of the Royal College of General Practitioners