BODY POLITIC **Nigel Hawkes**

Seeing through the alcohol statistics haze

Changes in the way alcohol related hospital admissions are counted favour the industry

The prime minister's intervention last week on the misuse of alcohol was as significant for what it didn't say as for what it did. There was no mention by David Cameron of the headline grabbing claim that more than a million admissions a year to NHS hospitals in England are attributable to alcohol, a claim that has been chorused regularly by alcohol charities and by the NHS Information Centre over the past couple of years (*BMJ* 2010;341:c4790).

Instead Mr Cameron quoted the not quite so awe inspiring figure of 200 000 such admissions a year. Behind this change lies a little noticed shift in the way that alcohol related admissions are to be counted. Although it sounds small, its effect on numbers and the costs of treating them is large. I understand that it emerged as a result of discussions in the Department of Health's much derided "responsibility deal," which brings together manufacturers, retailers, and others to try to control alcohol misuse (*BMJ* 2011;342:d4166).

Briefly, the one million plus figure is calculated from all admissions in which either the primary or a secondary diagnosis is wholly or partially attributable to drink. A patient may be admitted for a condition that is not linked to alcohol, but if any comorbidity is alcohol related, in whole or in part, that admission is counted as some fraction of an alcohol related admission. Because many patients are given several diagnostic codes, that spreads the net wide. Anybody admitted for any condition but who also has high blood pressure, for example, counts as about a third of an alcohol related admission (because high blood pressure is linked to drink), even if the actual cause of admission has nothing to do with drink or with high blood pressure.

The measure thus results in a high figure that, arguably, exaggerates the problem. But it is worse still if you want to use the measure as an index of progress, as it is inflated by "coding creep": the tendency of hospitals to attach more and more codes to their patients. This has been going on since about 2004, with the average number of codes given to each patient rising by about 50% since 2005. One reason for this is that the more comorbidities that are recorded, the better the hospital scores on comparative mortality statistics such as those produced by the healthcare analysis company Dr Foster (*BMJ* 2010;340:c2153).

So the rise in alcohol related admissions is largely an artefact of the way they are measured. The Department of Health desperately wants the responsibility deal to be seen to work, as evidenced by static or declining alcohol related admissions, so a marker that inevitably rises as hospital admissions rise was toxic, it belatedly realised.

When it published its public health outcomes framework in January, it said that the preferred option in future is an indicator that is based on primary diagnoses only, "to minimise the risk of perverse consequences from any changes in coding practice." Doing this eliminates all the extra admissions from the coding of comorbidities and reduces the total number of alcohol related admissions from more than a million to the 200 000 cited by Mr Cameron. It also hugely reduces the associated costs, although Mr Cameron does not seem to have taken this into account. He quoted a figure of £1.2bn (€1.4bn; $1.9bn) for inpatient costs, which comes from a 2008 report and seems to be based on the old method of calculation. By my reckoning, Mr Cameron's total cost to the NHS in England of £2.7bn a year therefore needs to be trimmed by the better part of £1bn.

It is worth rehearsing these figures, because they shed some light on what has become something of a moral panic about drinking. Everybody from the prime minister down believes that drinking is out of control, when the figures do not substantiate it. Data from the Office for National Statistics show that drinking levels have not risen in the past decade and have in fact declined.

"It could be argued that although drinking is not increasing, it is nevertheless too high and ought to be reduced across the board. Or, more narrowly, that greater efforts should be made to reduce hazardous drinking"

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So why the panic? It could be argued that although drinking is not increasing, it is still too high. Or, more narrowly, that greater efforts should be made to reduce hazardous drinking. Between these two views lies an ideological chasm that defines the politics of alcohol.

Mr Cameron did not mention setting a minimum price on a unit of alcohol, though advance trailing of his speech suggested that he might. That is the remedy proposed by the Scottish government (*BMJ* 2011;343:d5869), and its effect would be to cut alcohol sales across the board. The trouble is that the extra cash would go to the retailers—the very same people held responsible for the drinking "epidemic" as a result of their cut price deals—and the exchequer would actually lose. In Scotland the retailers would gain £103m a year from a minimum price per unit of £0.45 (some of which might be passed on to manufacturers), while the tax take would decline by £10.4m a year as sales fell, because duty will decrease by more than any increases in value added tax.

That doesn't strike me as much of a deal. Rob the exchequer and the citizen to reward those held responsible for the problem? It's hard to defend. But the alternative favoured by the industry—education and persuasion of the hazardous drinker—is dismissed as special pleading by those, including the BMA, who walked out of the responsibility deal a year ago, declaring it a fraud.

In their absence, the industry has gained an important change in the rules that reduces the apparent scale of the problem. Nobody's crowing in public, but in private a few trebles are being poured.

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MEDICINE AND THE MEDIA **Stephen Ginn, Jamie Horder**

"One in four": the anatomy of a statistic

Despite a lack of supporting evidence, the claim that one in four people will have a mental health problem at some point in their lives is a popular one. Where does this figure come from, and why does it persist, ask **Stephen Ginn** and **Jamie Horder**

"It's time to talk" is a campaign currently being promoted by Time to Change, a charity whose aim is to change attitudes to people with mental ill health. On the charity's website a banner tells us: "1 in 4 of us will experience a mental health problem at some point in our lives, but we still don't talk about it. What are we afraid of?"

This "one in four" figure has also appeared in government speeches[1] and NHS publications.[2] It is the name of a short film and the title of a mental health magazine.

Yet it is not always clear to what the figure refers. Time to Change seems to be referring to lifetime prevalence, while a 2010 advertising campaign by Islington Primary Care Trust stated, "One in four people will experience mental health problems each year." A statement on the Royal College of Psychiatrists' website reads, "One in four people has a mental health problem," implying point prevalence.

The evidence base

The number's origin is unclear. When one of us (SG) contacted a selection of organisations that use "one in four" in their literature, they cited a number of different sources. The earliest seems to be a 2001 World Health Organization report, *Mental Health: New Understanding New Hope*, which stated, "During their entire lifetime, more than 25% of individuals develop one or more mental or behavioural disorders (Regier et al 1988; Wells et al 1989; Almeida-Filho et al 1997)."[3]

However, none of the three papers cited contains an estimate of 25% lifetime risk. One did not report on lifetime prevalence at all,[4] and the two that did provide a lifetime figure of rather more than 25% (66% for "all [mental] disorders" in New Zealand and 31-51% in Brazil).[5 6]

Lifetime prevalence of mental disorder seems never to have been estimated in the United Kingdom. In 2007 the annual psychiatric morbidity survey (APMS) estimated a UK prevalence of 23% in the past week.[7] In numerous other countries lifetime estimates are reported as being in the region of 50%.[8]

We are unaware of any evidence that straightforwardly supports a UK lifetime prevalence of 25%. The APMS past week prevalence most robustly supports one in four as a statement of the UK's 12 month

prevalence,[7] but in this case the UK lifetime prevalence would be expected to be much higher.

Counting cases

A 2005 meta-analysis estimated a yearly prevalence of 27% for the European Union (including the UK),[9] but a 2010 update of this work revised this to 38% a year,[10] as a result of including more disorders such as insomnia and attention-deficit/hyperactivity disorder. This highlights the fact that over the years the consensus on what constitutes mental disorder has often changed.

Different population surveys adopt different definitions, and there is no agreement about whether to treat, for example, a phobia such as arachnophobia as "mental illness." No major study has considered nicotine dependence or male erectile disorder in their calculations, despite these disorders being widespread and listed in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). Nicotine dependence is perhaps responsible for more deaths than any other psychiatric disorder.

Furthermore, surveys such as the APMS establish diagnosis in a very different way from how it is discerned clinically. In the clinic, a doctor works from a patient's presenting complaint, through their history, and on to mental state examination. By contrast the APMS recruited a large representative sample and used a structured diagnostic interview to screen each participant for a range of disorders. Structured interviews involve a patient answering a fixed series of questions taken from published criteria.

Systematic checking of a symptom inventory in this way lacks the benefit of clinical judgment and simultaneously creates a risk of both over-diagnosis and under-diagnosis. Taken literally, the DSM-IV criteria for major depressive disorder would deem many people depressed after bereavement or the end of a relationship. Conversely, a patient's imperfect recall or lack of insight into their own psychopathology could lead to under-reporting.

The popularity of "one in four"

Despite these drawbacks, why has this figure proved so popular? We would like to suggest some reasons.

Demonstrating relevance: For journalists, quoting a high prevalence of mental disorder helps illustrate the newsworthiness of stories about mental health.

Fighting stigma: The one in four statistic has been used extensively by charities to advocate the interests of people with mental illness. Much of their recent campaigning has focused on attempting to combat stigma and prejudice through providing a more inclusive vision of mental disorder—one in which it is nothing unusual and a threat to everyone.

Not too big, not too small: If the intent is to raise awareness of the burden of mental illness, why do organisations not cite the even higher, and better supported, figures of one in three or one in two lifetime prevalence? We suggest that one in four is high enough to gain people's attention but not so high that it provokes incredulity, as claims that over 50% of people have had a mental illness indeed have.

Conclusion

The one in four figure for mental illness prevalence is widely quoted, related variously to lifetime, yearly, or point prevalence. The evidence indicates that it is best supported as an estimate of yearly prevalence. However, estimates of the population prevalence of mental disorder should be approached with caution, as the methods used often have shortcomings. It is important that people know that mental illness is common and that treatment of mental disorder is essential, but it is not clear that championing a poorly supported prevalence figure is the way to achieve this.

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References are in the version on bmj.com.

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