

LETTERS

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BEHAVIOURAL SCIENCE AND ANTIBIOTICS

Norwegians show that antibiotic resistance concerns us all

We agree with Tonkin-Crine and colleagues that the use of behavioural science to tackle antibiotic prescribing is welcome.¹

This past year, chicken consumption has dropped in Norway (by 20% for some distributors) mainly because of findings of resistant *Escherichia coli* in chicken meat. Assurances that kitchen hygiene and heat treatment render the meat harmless did not completely prevent this. Despite a media focus on the fact that only six of 500 000 urinary tract infections in Norway in 2010-14 were due to *E coli* closely related to a strain common in chickens,² many Norwegians still refrain from eating chicken.

We have in cooperation with the Norwegian Broadcasting Company (NRK) encouraged the public to submit environmental samples during June and July to the Norwegian Institute of Public Health to be screened for phenotypic resistance to cefotaxime, ceftazidime, and ciprofloxacin. The purpose of this activity was to engage people nationally in acknowledging that antibiotic resistance concerns us all.

The response from the public has been unexpectedly huge. Hundreds of people requested sampling equipment. Samples came from meticulously described soil, creeks, ponds, fountains, and so on. The results will be reported in a radio programme in August. So far, only naturally resistant bacteria have been found.

Our investigation shows that people will get engaged when individually challenged. Systematic analysis, controlled observations, and scientific studies of such behaviour may help us better predict which actions can help to prevent the development and spread of antimicrobial resistance.

We hope that the engagement of behavioural scientists in antibiotic resistance challenges will extend beyond prescribing to include other aspects related to this complex problem.

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1 Tonkin-Crine S, Walker AS, Butler CC. Contribution of behavioural science to antibiotic stewardship. *BMJ* 2015;350:h3413. (25 June.)

Cite this as: *BMJ* 2015;351:h4055

Comparison of weekday and weekend admissions for suspected acute stroke

Final diagnosis	Day of admission			In-hospital deaths (%)
	Weekday N (% of total)	Weekend N (% of total)	Total N (% of total)	
Stroke	4652 (79.5%)	1423 (82.8%)	6075 (80.3%)	18.6%
TIA*	618 (10.6%)	162 (9.4%)	780 (10.3%)	0.5%
Non-stroke or uncertain†	577 (9.9%)	134 (7.8%)	711 (9.4%)	9.1%
Total	5847	1719	7566	15.9%

*Transient ischaemic attack; †“Stroke mimics.”
Mantel-Haenszel common odds ratio 1.125 (95% confidence interval 0.97 to 1.31; P=0.13)

ZOMBIE STATISTIC

Basing seven day working on evidence not expediency

McCartney does not mention one obvious flaw in the studies purporting to show increased risk of mortality for weekend hospital admissions.¹⁻³ Patients with milder illnesses are less likely to call the doctor at weekends, so there are fewer admissions and the average severity of illness is probably greater.

A study of 4.3 million emergency admissions showed a mortality of 5.2% for those admitted at weekends compared with 4.9% on weekdays (odds ratio 1.1, 95% CI 1.08 to 1.11),³ but there were a third more emergency admissions on average weekdays. If these extra “optional weekday emergency admissions” had a mortality risk of only 4%, this would account for the difference. Such confounding by illness severity may be even stronger for non-emergency admissions.

Acute cerebrovascular disease is the biggest single contributor to the excess of weekend deaths.² Checking 15 years of data from the Gateshead stroke register,⁴ crude death rates were 15.5% for weekday admissions and 17.5% at weekends (1.16, 1.0 to 1.34; P=0.049), but there were 36% more admissions with suspected stroke on average weekdays. Weekday admissions included higher proportions of patients with transient ischaemic attacks and stroke mimics, among whom death rates were much lower (table).⁴ Adjusting for this difference alone reduced the mortality gap to insignificance (table), and the strokes themselves tended to be milder on weekdays.

Although the evidence for higher mortality at weekends is shaky, seven day consultant cover would have benefits, but these must be weighed against the disadvantages, particularly for continuity of care and

supervision of trainees. Consultants should demand that the proposed new way of working is evaluated in a large scale randomised trial before being forced on the whole NHS. It is time to show that policy can be based on reliable evidence rather than political expediency.

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1 McCartney M. The zombie statistic behind the push for seven day working. *BMJ* 2015;351:h3575. (6 July.)

Cite this as: *BMJ* 2015;351:h4061

CANCER SURVIVAL

Reported health related headlines are often unhelpful

I agree that we need to scrutinise healthcare performance and variations across trusts, regions, and countries.¹ Reflection on personal, institutional, and national data is the only way to learn and improve. However, simplistic reporting of headline data is dispiriting at best, and alarming or downright misleading at worst.

As Gigerenzer points out, survival rates depend on the denominator—thus the claim in 2007 that prostate cancer survival rates were 82% in the US versus 44% in England was misleading.² This difference arose because of lead time bias. Widespread prostate specific antigen measurements in the US meant earlier detection, but average age at death from prostate cancer was similar in both countries—early diagnosis produced no health gain. Survival comparisons are meaningless unless diagnosis is made at similar disease stages.

Even mortality, a harder end point, depends on various factors. EUCAN data showed that the incidence of breast cancer was just over 50% higher (129.2/100 000 v 84.5/100 000) and mortality was just under 50% higher (24.5/100 000 v 16.7/100 000) in the UK than in Spain.³ The UK’s crude disease specific mortality is thus slightly lower than Spain’s (incidence:mortality ratio 19.2% v 19.7%).

Media coverage (including *The BMJ*'s) ignored all these nuances, only mentioning the “fact” that mortality is worse in the UK than in several other Organisation for Economic Co-ordination and Development countries. We need informed reporting rather than scary headlines uncritically copied from press releases. If arising from sloppy and over alarmist press releases (as with those of some academics),⁴ any doctors involved should be subject to the same revalidation sanctions as any others not displaying probity.⁵

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1 Wise J. UK lags behind other countries on cancer survival but outperforms on low antibiotic prescribing, report finds. *BMJ* 2015;351:h3618. (3 July.)

Cite this as: *BMJ* 2015;351:h4056

Cancer survival is a poor indicator of quality of care

The Nuffield Trust and Health Foundation compared the quality of care of health systems in similar Organisation for Economic Co-operation and Development countries.¹ This comparison, based on quality indicators, is relayed by the media to put policy makers under pressure, with particular emphasis on poor cancer survival results.

However, if the ultimate aim is improving health outcomes for patients, cancer survival is a poor indicator of quality of care, perhaps even the worst. Two examples from France illustrate the point.

Since 2012, the US Preventive Service Task Force has recommended against prostate specific antigen cancer screening for prostate cancer because the disadvantages were deemed to exceed the benefits.² In France, from 1980 to 2005, such screening has resulted in a fivefold increase in age standardised incidence rate (the risk of being diagnosed as having prostate cancer)—from 24.8 to 127.1 per 100 000—with only a modest reduction in age standardised mortality rate (ASMR) (from 16.3 to 13.3). Nevertheless, prostate cancer survival increased from 70% for prostate cancers diagnosed in 1990 to 90% in those diagnosed in 2002. Thus, an excellent outcome in cancer survival doesn't mean that screening improves outcomes.

The reverse is also true. Many studies have found cervical cancer screening to be effective. In France, such screening reduced the ASMR for cervical cancer by 64% between 1980 and 2012 (from 5 to 1.8). However, cancer screening resulted in fewer cancers being diagnosed at later stages, which paradoxically led to a reduction in cervical cancer survival from 68% to 64% between 1990 and 2002.³

Cancer survival is therefore a poor indicator and should not be used for assessing the performance of health systems.

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Cite this as: *BMJ* 2015;351:h4059

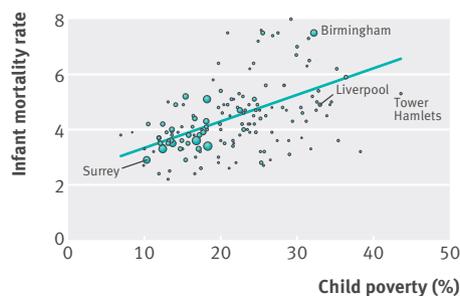
ABOLITION OF CHILD POVERTY TARGET

Doctors must advocate against high levels of child poverty

Torjesen highlights the UK government's decision to abolish its current target for assessing child poverty, a measure of material disadvantage that is based on relative and absolute income.¹ The downgrading of the existing target comes before the budget's big cut in tax credits, which will probably increase child poverty. Alongside ditching the Child Poverty Act targets, the plan is to replace the current measures with a range of untested outcomes that conflate the consequences of child poverty with the cause—a lack of material resources.

Why should clinicians be worried? Health outcomes for children and young people in the UK are poor, and our relatively high child poverty rates are thought to be a key reason for this.² Children growing up in income poverty experience a wide range of adverse child health and developmental outcomes, and they are more likely to develop chronic conditions of childhood.³ For example, children living in poverty in the UK are more likely than those not living in poverty to die in the first year of life (figure), be born small, be bottle fed, breathe secondhand smoke, become overweight, perform poorly at school, and die in an accident.⁴

Obfuscating the targets will not get rid of these problems. In absolute terms child poverty has already increased in recent years,⁵ and there is an urgent need for doctors to advocate for action to rectify the shameful levels of child poverty in the UK.



Infant mortality rate by relative child poverty (<60% median) for upper tier local authorities in England.

Source: ChiMat

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1 Torjesen I. Government abolishes child poverty target. *BMJ* 2015;351:h3643. (3 July.)

Cite this as: *BMJ* 2015;351:h3959

CHILDREN IN HOSPITAL

Blind spot around mental health needs of paediatric patients

“In brief” cites the new Care Quality Commission (CQC) survey of children in hospital: “87% rated their overall experience as seven or above out of 10.”¹ This gives a false impression. I hope a more detailed report from *The BMJ* will follow. In its report, the CQC states “Less than half (49% of parents and carers of children with a physical disability, and 48% of those with children with mental health needs or a learning disability) felt that staff definitely knew how to care for their child's individual needs. This compares to 72% of parents and carers of children without these conditions.”

Professor Edward Baker, CQC's deputy chief inspector of hospitals, comments: “What is particularly worrying is that children with physical, learning or mental health needs are telling us they have poorer experiences. This needs to be addressed straight away so that services meet the needs of all children, irrespective of any disability or specific need.”²

Despite a series of national guidelines over the years,³ there has been a consistent blind spot around the mental health needs of children in hospital.⁴

There are good reasons for this. Most paediatricians have not been well served by mental health and psychology so lack the knowledge with which to campaign for better resources. The most recent national review on child and adolescent mental health services, although aware of the need, failed to highlight mental health liaison as a right of all children in paediatric care.⁵ *The BMJ* could help by shining a light on a crucial element of child health.

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1 In brief. *BMJ* 2015;351:h3559. (1 July.)

Cite this as: *BMJ* 2015;351:h3887