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Partner notification for the control of STIs
Assisting patients in disclosing their diagnosis to partners is the biggest priority

In 2005 about 340 million people globally acquired new infections of the four most common curable sexually transmitted infections (gonorrhoea, chlamydia, syphilis, and trichomoniasis) and 4.1 million acquired HIV. Partner notification is essential to prevent reinfection of index patients, decrease the pool of infectious people, and prevent the transmission of HIV.

Provider referral, where health service personnel trace and notify partners, is practised in parts of the developed world. Patient referral, where index patients are encouraged to inform their partners of the need for treatment, is universal practice in the developing world, where provider referral is neither feasible nor affordable.

In this week’s BMJ, Trelle and colleagues report a systematic review of strategies to improve patient referral, as observational studies and randomised controlled trials indicate that current patient referral practices fail to reach many partners of people with sexually transmitted diseases in both developed and developing countries. Fourteen randomised controlled trials, four of which were conducted in countries with low average incomes, were reviewed. The trials evaluated two novel patient referral strategies: patient delivered partner therapy, where the index patient is given drugs or a prescription for their partner(s); and home sampling, where index patients with chlamydia give partners kits for collecting urine specimens, which are posted to a laboratory for testing. Meta-analysis of five trials (four conducted in the United States and one in Uganda) showed that supplementing patient referral with patient delivered partner therapy slightly reduced persistent or recurrent infection with gonorrhoea and chlamydia in index patients (risk ratio 0.73; 95% confidence interval 0.57 to 0.93) and increased the proportion of partners treated. Two Danish studies showed that home sampling increased the proportion of partners’ specimens being tested.

Patient delivered partner therapy and home sampling are attractive strategies to increase partners’ access to treatment or testing, because they are quick and simple for clinicians to implement. Increasingly, patient delivered partner therapy is being used in developed and developing countries. However, the current review shows that patient delivered partner therapy forms only one part of an effective patient referral strategy. The beneficial effects were modest, and they were susceptible to selection bias and measurement bias (in 23-70% of index patients a measurement of the primary outcome could not be obtained). The review also shows that patient delivered partner therapy can be substituted by patient delivered partner information (a booklet of tear out cards with treatment guidelines) with equal effect.

A home sampling strategy holds some promise in developing countries, but it needs more research as Trelle and colleagues’ review could not determine whether increases in specimen testing translated into increases in the treatment of infected partners. In most developing countries, diagnostic testing of sexually transmitted infections is neither affordable nor feasible, and a syndromic based approach to their diagnosis and treatment has been adopted. This avoids the need for diagnostic testing for most curable sexually transmitted infections, and renders a home sampling approach of little value.

Neither of these two novel interventions tackles the fundamental barrier to patient referral strategies: the difficulty people have telling their partners that they have a sexually transmitted infection. In contrast, counselling and educational interventions can be tailored to deal with the barriers patients experience in relation to disclosure, and they can begin to tackle the gender inequities that influence whether and how partners communicate about sexually transmitted infections.

The review by Trelle and colleagues included two African randomised controlled trials evaluating one to one counselling and education for index patients; it found that more partners were notified or treated than with simple patient referral. Unfortunately, the trials did not measure infection rates in index patients. Novel strategies that aim to increase partner access to treatment might produce bigger effects if used in combination with counselling and educational interventions for index patients. One of the two African trials used lay counsellors.

Current evidence leaves important questions unanswered. In developing countries where the syndromic approach is used, diagnostic specificity is lacking, especially in women with vaginal discharge. This leads to the unnecessary notification of partners and potential harms, including violence against women, about which little is known. Trelle and colleagues found no trials that investigated improving patient referral for HIV. Observational research in people with HIV suggests that continuous rather than one-off counselling services are best for tackling the difficulties index patients have in disclosing to their partners.

While patient delivered partner therapy and home sampling alone improve patient referral to some extent, strategies that promote and assist disclosure to partners are urgently needed as part of a comprehensive approach to patient referral.
Reducing the carbon footprint of medical conferences
Doctors must lead by example

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The fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC), published earlier this month, leaves no room for complacency.¹ It makes clear that warming of the climate system is unequivocal and that the increase in globally averaged temperatures since the mid-20th century is most likely due to increased human induced greenhouse gas emissions. It also states that warming and resultant sea level rises will continue for centuries even if emissions are stabilised. When scientific consensus reads like this, we are in trouble. The time to act is now.

The threat to human health from climate change—through malnutrition, disease, and flooding—is substantial, and in some parts of the world, immediate.² Most of the health burden of climate change is borne by children in developing countries.² It is ironic that doctors, for whom protecting health is a primary responsibility, contribute to global warming through unnecessary attendances at international conferences.

Lord Kelvin, physicist and past president of the Royal Society, said, “if you cannot measure it, you cannot improve it,” and it is encouraging that doctors are measuring the carbon footprint of their conference activities. Kelvin also said, “heavier-than-air flying machines are impossible,” but he was wrong. Last year, many doctors used such a machine to attend the European Respiratory Society annual congress in Munich. Julian Crane estimated that the 17 000 delegates generated about 4000 tonnes of carbon dioxide from travel alone.³ Earlier this month, Callister and Griffiths reported the carbon footprint of the American Thoracic Society meeting in San Diego. The meeting was attended by about 15 000 delegates who generated an estimated 10 779 tonnes of carbon dioxide from air travel.⁴

Although probably serious underestimates, these are big numbers.¹ How do we put them in context? The yearly per capita carbon dioxide emission in the United States is about 20 tonnes, so the 11 000 tonnes from the American Thoracic Society meeting is equivalent to that produced by around 550 US citizens in one year. But the US, the most energy hungry nation on earth, is not the best comparator—11 000 tonnes of carbon dioxide is equivalent to that produced in one year by 11 000 people in India and 110 000 people in Chad. The last is arguably the most appropriate comparison as climate change has probably contributed to the disappearance of Lake Chad, formerly the sixth largest lake in the world; sand dunes now encroach on its drying bed, imperilling the lives of thousands.⁴

The IPCC report also makes clear that climate change will affect us all. Sea levels will rise, increas-
distance learning deserves more attention. But even if conferences were effective, who should decide if the benefits are worth the costs—a doctor from Colorado or a fisherman from Chad?

Air travel is not the biggest contributor to greenhouse gas emissions, but it is one of the fastest growing. In 2001 the IPCC estimated that aviation caused 3.5% of human induced global warming, which could rise to 15% by 2050. Air travel is also one of the easier aspects of our high carbon lives to change. Scope exists for 15% by 2050. Air travel is also one of the fastest growing. In

or a fisherman from Chad?

benefits are worth the costs—a doctor from Colorado

discussion with a healthcare provider yields better results

than communicating the same message with printed

materials alone. What is noteworthy, however, is the

nature of the intervention and the size of its effect.

The intervention was not tailored to each patient's

individual circumstances, yet its health effects were

substantial, reliable, and enduring. This underscores

the important benefits that can be achieved with a

relatively modest effort.

Carefully explaining the meaning of normal test results before testing prepared patients to be reassured if test results were normal, strengthening the value of the results. Unfortunately, the study did not investigate whether a similar explanation after testing would have an additive effect. Normal test results might have been even more reassuring if individually tailored messages that included alternative explanations for medically unexplained symptoms were delivered after testing. Understandably, without such explanations some patients with no objective findings remain worried about undetected medical problems if their symptoms recur.

Although generic reassurance strategies may be useful, the results of this study show that the need for reassurance and optimal methods of providing such reassurance vary in different patients. For example, some patients within the “standard information” group reported their reassurance level as 0 (not reassured at all), whereas others reported it as 10 (completely reassured). Individual differences known to influence the extent of reassurance include the chronicity of symptoms, the accuracy of patients’ medical knowledge, and psychiatric comorbidities. One study found that patients who had persistent chest pain despite negative results on exercise testing were significantly more anxious and depressed than patients who had become pain free. Another study found that patients with gastrointestinal symptoms initially reported being greatly reassured when advised that gastroscopy revealed “nothing seriously wrong,” but patients with “high health anxiety” experienced resurgence in their worry and illness beliefs as early as 24 hours later. A “one size fits all” method is unlikely to be the best way to reassure patients about normal test results, but it seems to be better than the current system.

Diagnostic testing is sometimes undertaken mainly to convince patients that their symptoms are benign. Yet this simple well intentioned act can have unintended negative consequences, as many patients are not reassured by negative findings, and merely prescribing diagnostic testing may inadvertently validate and reinforce convictions that the symptoms are serious. The potential for iatrogenesis is increased when test findings are inconclusive and is especially high if further testing is necessary to investigate a false positive result. The eventually negative results of such extended testing may be difficult for the patient to believe.

Reassuring patients about normal test results

Face to face communication strategies are effective

Every practising doctor recognises that normal test results can fail to reassure patients. One possible cause is that suboptimal reassurance strategies leave some patients distressed about their symptoms. Uncertainty about the meaning or accuracy of normal test results may contribute to making symptoms worse and lead to additional costly and unnecessary medical visits and diagnostic procedures. Despite this, the medical literature provides little guidance about how to discuss normal findings with patients.

The study by Petrie and colleagues in this week’s BMJ is one of the few to examine ways of providing reassurance about normal test results. The findings of this randomised controlled trial show that patients with chest pain who received an intervention comprising an information pamphlet plus a brief pretest discussion with a health psychologist about the implications of “normal” results of an exercise stress test were more reassured by normal findings than patients who received the pamphlet alone or who received “standard information.” All patients in the reassurance intervention group reported obtaining and maintaining a high level of reassurance. Moreover, relative to usual care, fewer patients who received the reassurance intervention reported continuing chest pain one month after the stress test.

At its simplest level, this study demonstrates the common sense and empirically supported observation that communication can influence health outcomes. It is not particularly surprising that a face to face discussion with a healthcare provider yields better results than communicating the same message with printed materials alone. What is noteworthy, however, is the nature of the intervention and the size of its effect. The intervention was not tailored to each patient’s individual circumstances, yet its health effects were substantial, reliable, and enduring. This underscores the important benefits that can be achieved with a relatively modest effort.

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Early termination of drug trials
What are the ramifications for drug companies and drug safety monitoring boards?

In December 2006 a randomised controlled trial of torcetrapib (a cholesteryl ester transfer protein inhibitor aimed at increasing high density lipoprotein cholesterol) was stopped after an unexpected increase in mortality in people taking the drug. The implications are widespread, ranging from the future direction of cardiovascular prevention, the willingness of drug companies to develop new drugs in the face of massive financial risk, to the role of data and safety monitoring boards.

More than 12% of global mortality is caused by coronary heart disease. Reduction of low density lipoprotein cholesterol with statins has been successful in primary and secondary prevention of such disease, although mortality rates remain high. Because high density lipoprotein cholesterol is inversely associated with risk of cardiovascular disease, much investment has gone into newer drugs that increase concentrations of high density lipoprotein cholesterol (such as torcetrapib).

Phase II trials found that torcetrapib increases high density lipoprotein cholesterol in a dose dependent manner when given with and without statins, and smaller trials found no significant increase in adverse events. High density lipoprotein increases by 46% with 120 mg torcetrapib daily (P<0.001) and 106% with 120 mg twice daily (P<0.001).

Despite these promising results, improvements in surrogate endpoints do not always translate to lower mortality. For example, it was thought that controlling ventricular extrasystole would reduce death in patients with coronary heart disease. However, the CAST trial found that although several anti-arrhythmic drugs did reduce ventricular extrasystole, mortality was also increased. A similar unexpected increase in mortality was seen for cyclo-oxygenase-2 inhibitors and clarithromycin.

After successfully completing earlier phase trials, torcetrapib was tested in a randomised controlled phase III trial. The ILLUMINATOR trial, sponsored by Pfizer, planned to recruit 15 000 patients to be randomised to take torcetrapib combined with atorvastatin or atorvastatin alone. Follow-up was planned to continue until 2009, but on 3 December 2006 the trial was stopped prematurely, on the advice of the data and safety monitoring board, because of significant excess mortality in patients taking torcetrapib and atorvastatin compared with those taking atorvastatin alone (82 compared with 51 deaths). The cause of the increased mortality was not known.

The outcome illustrates, among other things, the importance of data and safety monitoring boards in monitoring the progress of trials. It is simplistic to say that the trial caused 31 unnecessary deaths because even though the difference between treatments groups was statistically significant, this difference could still be a chance finding. As results accumulate over time, outcomes often differ between treatment groups. The challenge for the safety monitoring board is to judge whether such differences are statistically and clinically convincing. Only when a sufficient number of deaths have occurred can there be any confidence in the validity of the observation.

The data and safety monitoring board reviews these differences according to a predefined plan as the results unfold. Such boards often establish their own guidelines to indicate when the steering committee should be advised to discontinue a trial on the grounds of benefit or harm from a new treatment. Typically, a data and safety monitoring board will use “asymmetric” guidelines, so that less certainty is needed to advise stopping the trial on the grounds of harm than when the treatment under investigation seems to be beneficial.

Data and safety monitoring boards walk a narrow line; patients volunteering to be in trials should not be exposed to undue risks from drugs, yet if a trial is stopped without compelling evidence of harm or benefit many other patients may be denied potential treatments. In the ILLUMINATOR trial, no indication or hypothesis suggested that inhibition of cholesteryl ester transfer protein had serious adverse effects, and the data and safety monitoring board was correct to allow the trial to continue until harm had been shown with a reasonable degree of confidence. The potential benefit of the new treatment cannot be underestimated.

Should data and safety monitoring boards have the responsibility of observing excess deaths yet allowing treatment to continue? Although these boards face many problems, no alternative exists; if the hypothesis on which the trial was based is convincing it can only be tested by a large phase III trial. Also, the role of data and safety monitoring boards in such trials is mandatory according to binding international guidelines.

Bearing in mind their crucial role how can the functioning of these boards be optimised? They should comprise clinicians and statisticians who thoroughly understand the clinical area of the trial, who are experienced in the vagaries of trials, and who have no financial or other competing interest in the outcome of the trial. They should be small, at the most five members, to allow rapid communication among members. Because of the size of many clinical trials, information delays are inevitable. Much attention should be given to the speedy production and transmission of data from the trial organisation to the board, so that decisions can be made in a timely manner. These boards carry heavy responsibilities, and the scientific merits of being a member of one should be recognised as equivalent to coauthorship.

The impact on drug companies of such an event cannot be underestimated. Pfizer’s action of withdrawing the drug seems proper, yet the decision to terminate the ILLUMINATOR trial must have been hard. The financial costs to the company are substantial, but keeping the drug alive might have been more costly, as seen with the Vioxx tragedy. It must be hoped that the drug industry does not lose the will to develop innovative drugs, for which phase III trials remain essential.
Bipolarity is important during treatment with antidepressants

Rubino et al have identified that most (if not all) of the excess risk of suicide in a group of patients treated with venlafaxine could be explained by a higher burden of risk factors for suicide. It may be true that this group of patients had more severe or “difficult to treat” unipolar depression, but it is also possible that bipolar features in this group may be responsible for the observed raised rates of suicidality. Perhaps because of limitations of space, the authors do not discuss this as a possibility, despite an adjusted relative risk of completed suicide of 4.94 (95% confidence interval 1.30 to 18.84) for “past history of bipolar disorder” (table 3).1

Recent work shows that at least 50% of difficult to treat unipolar depressed patients may have an undetected bipolar disorder,2 and it is now well documented that antidepressant monotherapy for bipolar depression runs a high risk of precipitating hypomanic or mixed affective states,3 which have been strongly associated with self harm and completed suicide.4 It is also the case that venlafaxine seems more likely than other antidepressants to precipitate a switch into hypomania or mania in bipolar depression.5 Furthermore, many of the variables reported by Rubino et al could be considered to point towards high levels of bipolarity in the venlafaxine treated group, including higher rates of a family history of psychiatric disorder, more frequent prescription of antipsychotics and mood stabilisers, a history of non-response to several different antidepressants, and more frequent lifetime depressive episodes.

Suicidal and self harm behaviours may be distinct

Classifying the method as well as the motivation of self harm is important since the physiological mechanisms lead to different perceived and actual outcomes.1 If the motivation is truly suicidal, a non-fatal outcome is unsuccessful, but where the motivation is not suicidal, death is accidental.

Overdoses of drugs or poisons are more likely to be lethal and, if unsuccessful, to result in hospital admission, whereas self harm involving physical injury such as cutting or hitting an inanimate object is more commonly encountered in the community. Suicide numbers in studies can be increased by including people who injure themselves using highly painful methods with low lethality, but suicide studies require differentiation between these groups to retain validity. If self harm patients who die accidentally are included this will have a skewing effect on postmortem studies of suicide.

In our clinical practices in the community we recognise many patients who regularly use low lethality, high pain methods such as cutting, scratching, or other physical trauma to modify mood. We have previously hypothesised an aetiology for this self harm based on an imbalance of endogenous opioids2 and have developed a treatment. Reductions in self harm behaviours were achieved by using low frequency transcutaneous electrical nerve stimulation (TENS)3 for a limited time, during which subsequent resolution of self harm behaviour and urges was achieved by using psychotherapy (unpublished data). In these cases we assumed a psychological stimulus for the enduring opioid imbalance and used Shapiro’s concept of adaptive information processing to address the root problems with trauma-specific eye movement desensitisation and reprocessing.4

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IQ and vegetarianism

Non-conformity may be hidden driver behind relation

The link between childhood IQ and vegetarianism in later life is perhaps not driven by a causal chain of mechanisms related to health.1 As the number of vegetarians in the population is low, vegetarianism could be considered as a type of non-conformist behaviour.

Non-conformist behaviour may threaten the extent to which a person belongs to a social group, or has the potential of enlarging the psychological distance from others. People who deviate from the group are more likely to be punished, ridiculed, or even rejected by other group members.2 Acquiring resources in isolation is more difficult than in groups.3 The need to belong may therefore reduce people’s inclination to act in a non-conformist way. However, general intelligence is a strong predictor of future resources.4,5 Highly intelligent people can afford more non-conformist behaviour because of their capacity to secure resources in isolation. Therefore, we propose that as general intelligence increases, the need to conform to group norms decreases.

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LETTERS

To test this hypothesis, we measured the “need for uniqueness” and general intelligence. The need for uniqueness is measured by a scale with statements indicating a low level of conformity, such as “I often dress unconventionally even when it’s likely to offend others.” Our study (32 men, 14 women) showed a significant positive relation between the need for uniqueness and general intelligence ($r=0.35$, $P=0.017$). This relation was similar for men ($r=0.32$) and women ($r=0.46$).

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Competing interests: None declared.

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ENDOMETRIOSIS

Infertility set in context

With an evidence based approach, Farquhar reviews the most outstanding aspects of endometriosis. Nevertheless, we were left with the impression that some important issues are in need of further clarification.

A systematic review has shown an improvement in pregnancy rates after laparoscopic treatment of endometriosis for women with infertility, but this improvement seems to be true only for mild or minimal endometriosis and its effect on more advanced stages remains uncertain. A recurrence of endometriosis does not inevitably mean further surgery. The evidence supporting systematic surgery for asymptomatic endometriosis is poor, and it has been suggested that re-operation is not always indicated for recurrent endometriosis. Transvaginal aspiration might prove to be a reasonable alternative for some patients to reduce impact on ovarian reserve as well as other potential surgical complications associated with re-operation. Whether endometriosis affects outcomes in the context of artificial reproductive techniques is still under debate; it has been proved in a recent systematic review that down-regulation with GnRH agonists for three to six months before starting in vitro fertilisation quadruples the odds of clinical pregnancy. Early referral to centres of excellence and early treatment of infertility should be considered in these patients.

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Competing interests: None declared.


RACISM IN THE NHS

Doctors who look and speak differently may be mistrusted

The experiences of the anonymous doctor are transferable to the thousands of visible minority doctors attempting to find career progression, satisfaction, and a sense of belonging in the NHS. Those who come to the United Kingdom having trained elsewhere are much less equipped to face these challenges.

It may be useful to remind ourselves what racism is. The Oxford Dictionary defines it as a belief in the superiority of a particular race and the prejudice based on this; antagonism towards or discrimination against other races and the theory that human abilities, etc. are determined by race.

On a day to day basis, in the health service, racism often translates to discomfort and mistrust of doctors who look and speak differently. Such mistrust has serious consequences for many ethnic minority doctors. The threshold at which errors are tolerated is much lower, and the way the system will respond to the same errors made by these doctors compared with white doctors is different. This is partly responsible for the disproportionate number of ethnic minority doctors who appear before the fitness to practise committee of the General Medical Council. Even more serious is the disproportionate number of ethnic minority doctors who go to jail for manslaughter. Similarly progress to executive positions in hospital trusts or royal colleges is more difficult for these doctors. They are also under-represented in clinical excellence awards.

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Competing interests: None declared.


Everyone has a race card

The debate on racism should be about the impact of expressed behaviour, rather than about intent. Hence the absurd incessantly repeated refrain of “I know XYZ, and he’s no racist,” even after XYZ may have said or done something that is in fact unequivocally racist. By making it a commentary on the whole of that person’s “character,” it becomes expedient to minimise and even rationalise certain behaviours on the grounds that they occur “infrequently,” are “aberrant,” or are “not indicative of the norm,” etc. We wouldn’t do this if someone had picked up a chair and thrown it at someone, would we? “I know XYZ and he’s completely non-violent.”

We need to become more perspicacious and industrious about helping individuals see the impact of their daily low level bigotry in the lack of leeway they give to certain others, in the generalisations they make, in the disbelief they express even as these others describe their experiences of marginalisation, exclusion, harassment, ridicule, and even assault.

A mainstream person also has a race card—and he or she plays it far more often than a visible minority—because it is worth far more than the discredited race card of a visible minority. It is a trump of disbelief and even the daily lived reality of his or her visible minority counterparts and colleagues.

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Competing interests: None declared.

NHS should increase links with poor countries

Sally Hargreaves LONDON

The UK government should bolster its commitment to supporting and training healthcare workers in resource poor countries, says a report commissioned by the government and written by the former chief executive of the NHS, Nigel Crisp.

The United Nations’ millennium development goals on health will not be met unless the capacity of the workforce in these countries is improved, warns Lord Crisp in the report, which was published this week. He calls on the UK government to strengthen existing health link partnerships and to increase investment.

The international community spends considerable amounts tackling major health problems, such as tuberculosis and HIV and AIDS in resource poor countries, yet many believe that such efforts are futile if systems are not in place to train and retain doctors and nurses.

The World Health Organization estimates that one million more healthcare workers are needed in these countries if they are to meet basic health goals. The increasing “brain drain” of workers to the United Kingdom and elsewhere presents formidable future challenges, the report says.

Various partnerships and training schemes do already exist between NHS staff and hospitals overseas.

However, Andrew Purkis of the charity the Tropical Health and Education Trust, which aims to improve the quality of health services in poor countries, said, “These initiatives have, to date, been largely dependent on charity support.”

Lord Crisp’s report sets out 16 key recommendations for action. These include committing a major part of future UK aid flows to improving the quality of health training in poor countries and enhancing partnerships between UK institutions and resource poor countries.

The government has endorsed these recommendations, this week committing £1m (£1.5m; $1.9m) in funds over two years.

Global Health Partnerships: The UK Contribution to Health in Developing Countries is available at [www.dfid.gov.uk](http://www.dfid.gov.uk).

Dying woman seeks backing to hasten death

Clare Dyer BMJ

A terminally ill woman launched an action in the High Court in London this week for the right to be sedated into unconsciousness by morphine, even though it will hasten her death.

Kelly Taylor, 30, from Bristol, has Eisenmenger’s syndrome, an irreparable heart defect that causes chest pain and other symptoms, and Klippel-Feil syndrome, a congenital defect marked by fusion of the vertebrae in the neck. Her doctors have not been able to find a combination of drugs to relieve her pain, and she has been told that she has less than a year to live.

Her cardiologist and palliative care consultant are refusing to carry out her wishes, saying that to increase her dosage of morphine to such a level would amount to euthanasia, which is murder under English law. The case has also been brought against her GP, but the court was told at a preliminary hearing this week that he disputed her claim that she had consulted him and that he had refused to give the treatment.

Mrs Taylor is asking the court to declare that the treatment would be lawful under the longstanding common law principle of double effect, which allows a doctor to administer treatment that hastens death, providing the intention is to relieve pain rather than to kill.

A spokesperson for St Peter’s Hospice in Bristol, one of the defendants in the case, said: “The doctors, management, and trustees of St Peter’s believe that Mrs Taylor’s situation, we cannot support her request for doctors to sedate her to a state of unconsciousness with the specific intention of ending her life. In our view this would involve the doctors in assisting her suicide, which is both unlawful and unethical.”

Mrs Taylor, who has been married for 10 years, was on a waiting list for a heart and lung transplantation for nine years, but she came off the list three years ago when she became too weak to undergo the operation.

A BMA spokesman said: “While we sympathise with Mrs Taylor’s situation, we cannot support her request for doctors to sedate her to a state of unconsciousness with the specific intention of ending her life. In our view this would involve the doctors in assisting her suicide, which is both unlawful and unethical.”

A full hearing of the case will take place in the week beginning 26 March.
The eyes have it

Susan Mayor LONDON

“Close up and personal, looking directly into the soul of the sitter,” is how the fashion photographer John Rankin Waddell (known just as Rankin) describes his latest exhibition of people’s eyes, which opened in London this week.

Rankin has photographed the irises of clients, friends, and “beautiful eyed” people. The iridescent images are emphasised by circular wooden frames more than a metre in diameter. The exhibition Eyescapes is at The Gallery, 125 Charing Cross Road, London, until 3 March (tel 020 7287 1925). See www.rankin.co.uk

Open access will mean peer review becomes “the job of the many, not the select few”

Robert Short LONDON

Organisations that fund research are increasingly asking authors to place their research in open access repositories within a set period of their papers being accepted for publication in peer reviewed journals.

Although the number of bodies introducing such a requirement grew particularly rapidly in 2006, the momentum continues this year, Richard Smith, a board member of the Public Library of Science (PLoS) and former editor of the BMJ, told the BioMed Central colloquium on open access in London last week.

Dr Smith cited a recent article showing that in the first month of 2007 four organisations adopted an open access requirement and five made pledges to adopt such a requirement, while in another five cases there were significant calls for such mandates.

He said that the communication of scientific research was at the beginning of a paradigm shift, with changes not only in how research papers can be accessed but also in the shape of scientific papers.

Innovations in online open access journals would allow multimedia content, fuller reporting of data, and greater interconnectivity and exploitation of data, he added.

Research would tend to be published faster, and peer review was likely to be increasingly through post-publication comment and annotation by interested readers. He predicted: “I think that peer review will become the job of the many, not the select few, and it will be much more open.”

Doug Altman, director of the Medical Statistics Group of the charity Cancer Research UK, described the repercussions of the current experience of limited access and poorly structured abstracts.

Often in poor countries only the free abstracts are available to clinicians. These abstracts tended to be short, poorly written, and misleading, he said.

Professor Altman cited a case in southern Africa where the care of patients was changed on the basis of an abstract, potentially resulting in increased perinatal transmission of HIV (PLoS Medicine 2006;3:e252). He also noted that abstracts were inadequate for the development of systematic reviews, and researchers often had to pay for access to hundreds of articles, only to have to exclude them from review.
UK is behind other rich countries in terms of children’s welfare

Peter Moszynski LONDON

The United Kingdom ranks lowest overall of 21 industrialised countries in a new assessment of children’s welfare, says a report released this week by Unicef.

The report is based on data from members of the Organisation for Economic Co-operation and Development (OECD) compiled by Unicef’s Innocenti Research Centre. The report claims to provide “for the first time, a comprehensive assessment of the lives and well-being of children and young people in 21 nations of the industrialised world.”

Drawing on 40 separate indicators relevant to children’s lives and children’s rights, it attempts to measure child welfare in six categories: material wellbeing, health and safety, education, peer and family relationships, behaviours and risks, and young people’s own subjective sense of wellbeing.

The report says, “All families in OECD countries today are aware that childhood is being re-shaped by forces whose main spring is not necessarily the best interests of the child.”

Unicef says that the report comes at a time when “there is growing concern regarding the welfare of children in the UK.” Its findings show that the UK ranks in the bottom third of countries in five of the six categories and comes last overall when all the indicators are averaged out. The only category in which the UK is not in the bottom third is health and safety, in which it came 12th.

Bob Reitmeier, chief executive of the Children’s Society, said: “We simply cannot ignore these findings. It is time we woke up to the fact that children in this country are simply not getting the childhood they deserve. Rather than simply mouthing slogans such as ‘our children are our future,’ we need to put our money where our mouth is.”

The United States is also in the bottom third of countries in five of the six categories reviewed, the other category being education. The Netherlands heads the table, ranking in the top 10 in all six categories. Overall, European countries dominate the top half of the league table, with northern European countries claiming the top four places.

The report says: “There is no obvious relationship between levels of child wellbeing and GDP [gross domestic product] per capita.” The Czech Republic, for example, achieves a higher overall rank for child wellbeing than several much wealthier countries, including France, Austria, the US, and the UK.

“All countries have weaknesses to be addressed,” said Marta Santos Pais, director of the Innocenti Research Centre. “No single dimension of wellbeing stands as a reliable proxy for child wellbeing as a whole, and several OECD countries find themselves with widely differing rankings for different dimensions of children’s lives.”


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Government needs to take lead in preventing injuries

Oona Mashta LONDON

Primary care trusts, along with local authorities, should draw up local strategies to help prevent some of the two million visits of unintentionally injured children to emergency departments each year in the United Kingdom, says a new report from the Audit Commission and the Healthcare Commission.

The joint report says that the government has failed to tackle the problem and should spell out what is needed locally to prevent accidental injuries.

Injuries such as those caused by burns, falling down stairs, and poisoning are a leading cause of death and illness in children aged from 1 to 14 years old and account for about 120,000 admissions to hospital a year in England. The annual cost to the NHS is estimated at £149m (£220m; $290m).

Ian Kennedy, chairman of the Healthcare Commission, said that the efforts of national and local government to reduce the numbers of accidents in children were “a disgrace.”

“For too long, this issue has been pushed down the agenda. No single agency or body has taken a clear lead,” said Professor Kennedy.

“Health services need to collect robust data on the types and causes of injuries that they see in the children who they treat.”

The report says that the gap between the poorest and wealthiest families in the number of injuries in children is widening.

Michael O’Higgins, chairman of the Audit Commission, said: “Children of parents who have never worked or have been unemployed for a long time had 13 times the risk of dying from an accident and were 37 times more likely to die as a result of exposure to smoke, fire, or flames than children of parents who worked in managerial or professional jobs.”

The report criticises the lack of a coherent government strategy and a failure to tackle the problem at a local level. Ad hoc local initiatives have not had enough of an effect, it says, possibly because of poor coordination. But it also highlights examples of good practice, including a scheme in the borough of Burnley, Pendle and Rossendale that succeeded in making homes safer for young children.


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PERCENTAGE OF PUPILS IN 2001-2 AGED 11, 13, OR 15 YEARS WHO REPORTED HAVING BEEN DRUNK TWO OR MORE TIMES

| Country       | France | Greece | Spain | UK | Portugal | Netherlands | Switzerland | Ireland | Belgium | Czech Republic | Austria | Poland | Norway | Sweden | Hungary | Germany | Italy | Denmark | Hungary | Portugal | Canada | Belgium | Czech Republic | France | Poland | UK |
|---------------|--------|--------|-------|----|----------|-------------|-------------|---------|---------|----------------|---------|--------|--------|--------|---------|---------|-------|---------|---------|---------|--------|--------|-----------|--------|--------|
| % of pupils   | 46.5%  | 27.8%  | 31.4% | 35.7% | 40.4%    | 34.9%       | 32.7%      | 41.4%   | 39.2%   | 32.7%          | 36.8%   | 31.4%  | 42.2%  | 40.4%  | 30.4%   | 27.8%  | 35.7% | 42.8%   | 41.4%   | 39.2%   | 39.2%  | 32.7%    | 32.7%  | 36.8%  |

Source: Innocenti Research Centre

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NATIONAL AVERAGE RATINGS OF 11, 13, AND 15 YEAR OLDS’ SELF ASSESSMENT OF WELLBEING, RELATIVE TO OECD AVERAGE

| Country       | Netherlands | Spain | Greece | Austria | Ireland | Sweden | Norway | Germany | Italy | Denmark | Hungary | Portugal | Canada | Belgium | Czech Republic | France | Poland | UK |
|---------------|-------------|-------|--------|---------|---------|--------|--------|---------|-------|---------|---------|---------|--------|--------|----------------|--------|--------|
| Children’s self assessment of wellbeing, relative to overall average | 80.4% | 81.4% | 81.2% | 80.6% | 76.4% | 77.2% | 76.7% | 77.4% | 77.0% | 77.6% | 78.0% | 77.0% | 77.7% | 77.3% | 80.7% | 79.6% | 78.5% | 79.1% | 78.8% | 78.4% |

Source: Innocenti Research Centre
Portugal is ready to decriminalise abortion

Tiago Villanueva LISBON

Portugal has taken a decisive step towards decriminalising abortion, after 59% of people who voted in a national referendum last week backed reform of the law so that abortion can be carried out up to the 10th week of pregnancy in registered premises. Forty per cent of voters were against the proposal, but 56% of the eligible population of voters didn’t vote at all, meaning that the result of the referendum is not binding.

But Portugal’s prime minister, José Sócrates, has stated publicly that a law decriminalising and regulating abortion will be introduced in the next few months. The percentage who voted in favour of reforming the abortion law represents a shift in opinion, as the “no” vote won by a very small margin in a previous referendum in 1998, although 70% of voters abstained.

Portugal currently has very restrictive legislation on abortion, similar to the Republic of Ireland, Poland, and Malta. It is the only country in Europe where women who consent to having an abortion and where health professionals who perform an abortion, with or without a woman’s consent, can be prosecuted. Several cases have been brought in recent years, and a number of women and doctors and nurses have been convicted and jailed under the abortion legislation.

Abortion was completely prohibited in Portugal until a law was passed in 1984 allowing abortion to be carried out up to the 12th week of pregnancy, where continuing the pregnancy could be life threatening or risk severe physical or mental injury to the woman.

Commission for Racial Equality reviews Department of Health

Owen Dyer LONDON

The UK Commission for Racial Equality is to launch a formal investigation to discover whether the Department of Health is failing to meet its duty to promote race equality under the Race Relations Act 1976, it was announced last week.

Anthony Robinson, the commission’s director of legal services and enforcement, said, “We are concerned about the Department of Health, as we have reason to believe that they have not been meeting their obligations under the law.

“This is worrying, as they influence and shape local health services, and we have to make sure as a regulator [that] communities are not being disadvantaged on the ground because this work is not being carried out.”

The health department, like all government ministries, has a statutory duty to assess all new policies and legislation for their effect on different ethnic groups to ensure that there are no unbalanced effects. This is normally done through the mechanism of race equality impact assessments.

But the Commission for Racial Equality maintains that the health department is not properly carrying out these assessments, despite being repeatedly urged by the commission to address persistent inequalities.

Under the commission’s enforcement powers it may issue a non-discrimination notice, requiring changes in practice. If the notice is breached or ignored, the commission may seek a court order to enforce it.

The commission was unwilling to specify details of the department’s alleged failings, citing the possibility of legal action, but a spokeswoman said they were in the area of healthcare policy, not the department’s own employment practices.

The department has often acknowledged persistent racial inequalities in healthcare delivery and outcomes. In creating a new NHS post of director for equality and human rights in 2004, it noted that mortality from coronary heart disease among first generation South Asian adults was about 50% higher than the national average (BMJ 2006;332:874).

Perinatal mortality among UK mothers born in Pakistan was nearly twice the national average, while type 2 diabetes was up to six times more common in people of South Asian origin and up to three times more common in African and Afro-Caribbean people, the department said.

But the area that has resulted in the most criticism of the health department has been inequality in the provision of mental health services. Black people are more than six times more likely than white people to be detained under the Mental Health Act.

Acknowledging “particular inequity” in this field, the former health secretary John Reid announced in 2004 a “five year plan” entitled “Delivering race equality in mental health care.”

But Claire Felix, manager of black and ethnic minority initiatives at the mental health charity Rethink, said: “The department’s efforts to ensure that it complies with the Race Relations Act have not succeeded in mental health.”

Texas governor is criticised for vaccinating girls against HPV

Janice Hopkins Tanne NEW YORK

The Republican governor of Texas, Rick Perry, has signed an executive order requiring girls aged about 11 or 12 to be vaccinated with Gardasil, Merck’s vaccine against the sexually transmitted human papillomavirus (HPV). Girls who haven’t been vaccinated will not be allowed to enter the sixth grade of school, unless their parents say that they object to vaccination on the grounds of religion or conscience.

By issuing an executive order Governor Perry avoided the usual approval process through the Texas state legislature. He said, “The HPV vaccine provides us with an incredible opportunity to effectively target and prevent cervical cancer.”

He said that it was no different from vaccinating children against polio. His supporters also point out that vaccinations against childhood diseases are often required by school districts in the United States.
Texas governor is criticised for decision to vaccinate all girls aged 11 and 12 against HPV

...but had not been able to obtain an NHS post before the rules changed in April 2006, the judge said. In his application to the court, Dr Yousaf said he would never have come to the UK or remained here had he known that permit free training was under threat.

The changes to the rules prevent doctors from outside the EU taking up UK training posts if there are eligible candidates for the posts from the UK and EU. In the past, the judge said, the NHS had a shortage of British trained doctors, which had been alleviated by large numbers of foreign doctors coming to the UK to train or work.

But a big expansion in medical school intake meant that allowing overseas doctors to obtain training posts in the same numbers would have left many UK medical graduates unable to complete their training.

The association’s lawyers argued that the government had acted unlawfully in failing to consult it before the rule changes were announced without notice in March 2006, to take effect the next month. But the judge ruled that the government was under no obligation to consult the association in advance.

He said that the Home Office had failed to carry out an assessment of the effect of the change on racial equality, as required by the 1976 Race Relations Act, but that this did not justify quashing the regulations.

Edwin Borman, chairman of the BMA’s international committee, described the government’s treatment of overseas doctors as “very disappointing.” He said, “They were given the impression that they’d be able to contribute to the NHS and spend their whole careers in the UK. Then the rules changed overnight and many were forced to leave.

“The failure of the government to consult with the medical profession meant that they had little opportunity to prepare to leave the country.”

**Court rejects doctors’ challenge to UK work restrictions**

*Clare Dyer BMJ*

Doctors from other countries who challenged the UK government in the High Court over new rules restricting their right to work in Britain lost their case last week.

Mr Justice Stanley Burnton ruled that the government had acted lawfully when it abolished the permit free training scheme, which allowed graduates of foreign medical schools outside the European Union to take up posts in the United Kingdom without a work permit.

He also upheld guidance from the Department of Health that has made it much harder for doctors on the highly skilled migrant programme to obtain appointments in the NHS.

The British Association of Physicians of Indian Origin, which brought the challenge, was given permission to now take its case to the Court of Appeal. Members are seen at a London demonstration last year (above). Ramesh Mehta, the association’s president, said it was seeking contributions to an appeal fund from doctors and medical organisations.

The association, which represents 5000 doctors from the Indian subcontinent, was joined in its challenge by Imran Yousaf, a doctor from Pakistan. The judge revealed that Dr Yousaf had committed suicide last month, after the case was heard in the High Court but before the outcome was known.

Dr Yousaf came to England to complete his postgraduate training, running up debts, but had not been able to obtain an NHS post before the rules changed in April 2006, the judge said. In his application to the court, Dr Yousaf said he would never have come to the UK or remained here had he known that permit free training was under threat.

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“The failure of the government to consult with the medical profession meant that they had little opportunity to prepare to leave the country.”

**decision to vaccinate all girls aged 11 and 12 against HPV**

Merck’s vaccine protects against HPV types 6, 11, 16, and 18. In clinical trials it provided five years of protection, but only about 1200 of those participating in trials were pre-teen girls.

The vaccine was unanimously recommended by the US Centers for Disease Control and Prevention last July. It costs about $360 (£185; €280) for three required injections, considerably more than vaccines against other childhood diseases, most of which are spread by close social contact, not by sexual activity.

The vaccine will be available free of charge to Texan girls who do not have health insurance or whose health insurance does not cover the vaccine.

Parents have criticised the governor’s decision, and some state legislators have called for it to be amended. They said that providing the vaccine was giving tacit approval to premarital sex, when Texas endorses a programme of abstinence until marriage in school sex education courses.

Parents and other groups have complained that the vaccine’s long term effectiveness is not known. They are also worried about the effects many years later of injecting chemicals into children’s bodies.

Focus on the Family, a conservative group, issued a position statement saying, “Focus on the Family supports widespread (universal) availability of HPV vaccines but opposes mandatory HPV vaccinations for entry to public school. The decision to vaccinate a minor against this or other sexually transmitted infections should remain with the child’s parents or guardians.”

Thirty two of the 37 members of the Texas state House of Representatives sent Governor Perry a letter asking him to rescind his order because it intruded into families’ lives, the Dallas Morning News reported.
**IN BRIEF**

**Hospital on sterilisation alert:** Australia’s Canberra Hospital has had to trace 97 people who as infants had undergone colon biopsies between 1987 and late last year, after discovering that biopsy forceps had been incorrectly sterilised for 20 years. The local health authority said that although the chance of infection with HIV or hepatitis was small, those involved would be offered tests.

**Cannabis reduces pain:** Twice as many patients with HIV-associated sensory neuropathy who smoked cannabis achieved at least a 30% reduction in pain as did those who smoked a similar placebo cigarette with the active tetrahydrocannabinol component removed (34% versus 17%), a trial conducted at the University of California, San Francisco, has found (Neurology 2007;68:515).

**Babies to be screened for deficiency:** By March 2009 screening for medium chain acyl coenzyme A dehydrogenase deficiency will be offered for all newborn babies in England. This rare inherited condition makes it difficult for the body to change fat into energy and affects about one child in every 10 000 born in the UK.

**Netherlands gives commitment on smoking ban:** The Netherlands will end smoking in cafes, hotels, and restaurants at the latest by 2011, under the new coalition government’s programme. The new commitment will be achieved “through dialogue with industry.” The move comes after disappointing results from attempts to phase out smoking through industry self regulation.

**University bans stem cell research at centre:** In a controversial deal the University of Sydney has agreed to ban embryonic stem cell research at a large new medical research centre to be built on land belonging to a Catholic college.

**Bulgarians protest over death sentences:** Thousands of people demonstrated across Bulgaria last week to protest against the plight of the five Bulgarian nurses and Palestinian doctor who have been sentenced to death by Libyan courts for allegedly infecting more than 400 Libyan children with HIV.

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**Internet doctor put patients at risk, GMC is told**

Owen LONDON

A GP who became one of Britain’s first doctors to offer consultations over the internet was this week accused at a GMC hearing of irresponsible prescribing.

Julian Eden, of St John’s Wood, London, was interviewed by the BBC in 2000 as “the first doctor in the UK to offer both a diagnosis and prescriptions to patients over the internet.” He is the founder and medical director of e-med (http://e-med.co.uk), a website offering private medical services online.

But Dafydd Enoch, counsel for the GMC, said the service put patients at risk. “In this case you will hear that Dr Eden was consulted by highly vulnerable patients,” he told the hearing.

The striking similarity is the complete lack of any appropriate questions and the lack of any face to face consultation.

“While his pockets were being lined, the patients were being drawn into dependency and abuse,” added Mr Enoch.

The accusations against Dr Eden relate to three patients and two journalists posing as patients who obtained drugs from various websites offering Dr Eden’s services. The e-med service charged a £20 (€23; $39) annual membership fee and £15 for each online consultation.

Another patient, a Swansea businessman named only as Patient X, was prescribed a month’s supply of the sleeping pills zolpidem 43 times and zopiclone eight times over a period of 26 months.

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**Breast cancer mortality in Europe is still rising, despite more screening**

Rory Watson BRUSSELS

The annual number of new diagnoses of cancer in Europe has risen by 300 000 since 2004, says a new study from the International Agency for Research on Cancer.

Peter Boyle, director of the Lyon based agency and one of the authors of the report, which was published online on 7 February in the Annals of Oncology (http://annonc.oxfordjournals.org; doi: 10.1093/annonc/mdl498), warns that despite better prevention and treatment Europe faces a big increase in the incidence of cancer, largely because of its ageing population.

“Urgent action is particularly vital now to take preventive action against cancer, especially in central and eastern Europe, with strong and effective measures to curb the tobacco epidemic and more widespread screening programmes for breast, cervix, and colorectal cancers,” Dr Boyle says.

The World Health Organization’s Cancer Research Agency estimates that last year almost 3.2 million cases of cancer, excluding non-melanoma skin cancer, were diagnosed in the whole of Europe, whereas in 2004 the number was 2.9 million. Cancer accounted for 1.7 million deaths in Europe as a whole and for more than a million in the 25 countries of the European Union.

In the 25 EU countries the number of new cases in 2006 was just under 2.3 million, and the number of deaths was more than one million, says the report.

Since 2004 breast cancer has become the commonest form of the disease to be diag-
Doctor, doctor: I got the fever, yeah, and you got the cure

Roger Dobson ABERGAVENNY

Doctors may be lampooned in opera, vitified in films, and condemned in literature, but in rock and roll they are the sweet talking guys.

They dispense good vibes, not to mention a number of illicit drugs, and they also have an extraordinary high rate of consultations for love sickness.

What may well be the first study of the doctor-patient relationship in rock and roll music finds that song writers attribute special psychological significance to doctors (Medical Practice Management 2006;22:162-5).

That may, says the author, be because many rock musicians have been in psychotherapy at some point in their lives, and their descriptions of doctor-patient relationships may well mirror those experiences.

“Rock songs shed additional light on doctor-patient relationships and the connection between musicians and the medical profession,” writes Arthur Lazarus, senior director of clinical research at AstraZeneca Pharmaceuticals, Wilmington, Delaware, whose study analyses the lyrics of rock and roll songs in which doctors are the central characters.

He says that rock and roll music provides a unique opportunity to study doctor-patient relationships: “A special relationship between doctors and their patients emerges when doctors become the focus of rock songs. Physicians are portrayed quite differently in rock music than they are in literature, art, cinema, and theatre.”

“If you’re down he’ll pick you up. Take a drink from his special cup”

The study shows that in rock songs doctors are most often consulted over cures for love sickness. “Good Lovin'” the classic 1960s song by the Young Rascals, for example, is about a patient who was feeling so bad that he asked his family doctor just what he had. The doctor, referred to as Mr MD, replies that “good lovin’ should help, prompting the line “I got the fever, yeah, and you got the cure.”

Love’s burning desire is also evident in “Doctor! Doctor!” by the Thompson Twins: “Oh, doctor, doctor, can’t you see I’m burning, burning? Oh, doctor, doctor, is this love I’m feeling?” In “A Bad Case of Loving You” on the 1979 Secrets album of Robert Palmer (pictured), a lovesick man proclaims, “Doctor, Doctor, give me the news. I got a bad case of lovin’ you. No pill’s gonna cure my ill.”

Many rock and roll doctors, such as Steely Dan’s Doctor Wu, are also involved in dispensing illicit drugs. The song “Doctor Robert” by John Lennon and Paul McCartney is also about a doctor who seems to dispense hallucinogenic drugs to his friends: “If you’re down he’ll pick you up. Take a drink from his special cup. He’s a man you must believe. Helping everyone in need. No one can succeed like Doctor Robert.”

Dr Lazarus says that it is remarkable that “physicians have been personified in some well known rock songs, primarily as a symbolic cure for lovesickness,” he says.

“If you’re down he’ll pick you up. Take a drink from his special cup”
Intravenous immunoglobulin saves lives

**SAVING LIVES WITH INTRAVENOUS IMMUNOGLOBULIN**

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Intravenous immunoglobulin is a treatment for sepsis; it’s recommended mainly for patients with toxic shock syndrome caused by a group A streptococcus. But a recent systematic review suggests that it could be useful for a wider range of patients.

After pooling data from 20 randomised trials, the researchers report that intravenous immunoglobulin reduced overall mortality by 26% in a mixed population of over 2000 critically ill adults with sepsis (risk ratio 0.76, 95% CI 0.62 to 0.89 compared with placebo or no treatment). This translates to one extra life saved for every nine patients treated (95% CI 4-15), a benefit that compares favourably with accepted treatments such as activated protein C.

Intravenous immunoglobulin seemed to work best for sicker patients and those who had higher doses or a longer duration of treatment. The review was paid for by Ontario’s ministry of health and long term care, independent of any manufacturers.

The authors say it’s time for a definitive large trial of intravenous immunoglobulin. Most of the existing trials were conducted many years ago and may not reflect modern intensive care practice. Few are a reliable source of information on side effects. If the review’s findings are confirmed, intravenous immunoglobulin could save an extra 20 000 lives a year in the United States alone. 

**Ann Intern Med 2007;146:193-203**

**BRIEF INTERVENTIONS DON’T WORK FOR INPATIENTS WITH ALCOHOL PROBLEMS**

Problem drinking is extremely common, and there’s some evidence that brief counselling from a healthcare professional can help. So US researchers were disappointed when their opportunistic counselling failed to encourage medical inpatients to seek treatment or reduce their excessive alcohol consumption.

The randomised trial included 341 medical inpatients who admitted to drinking more than was good for them (for men, five or more standard drinks on each occasion or more than 14 a week; for women, four or more drinks on each occasion or more than 11 drinks a week). Half the participants had 30 minutes of counselling from a trained professional during their stay in hospital; the rest did not. After three months, all the patients reported drinking slightly less each day, with no difference between the control and intervention group. A similar proportion of the alcohol dependent patients in each group had sought treatment for alcoholism (44% of controls v 49% of the intervention group). The counselling had no impact on seven other outcome measures, including quality of life and readiness to change.

So brief counselling during a hospital stay was not enough for this cohort of risky drinkers—perhaps because 77% (132/172) of them were already dependent on alcohol and in need of more intensive treatment. It’s also possible that the brief counselling session was simply lost in all the background noise of a busy hospital admission. Only a third of the intervention group could recall the counselling session a year later.

**Ann Intern Med 2007;146:167-76**

Aprotinin linked to excess deaths after coronary artery surgery

Last year 246 000 Americans received aprotinin during coronary artery surgery. Aprotinin reduces bleeding and has been licensed for use during coronary artery surgery since 1993 in the United States. More recently, aprotinin has been linked to renal toxicity; cardiovascular, cerebrovascular, and pulmonary vascular side effects; and now deaths. In a prospective study of 4374 patients having coronary artery surgery, those given aprotinin were significantly more likely to die during the next five years than those who received no antifibrinolytic agent (223/1072 (20.8%) v 128/1009 (12.7%); adjusted hazard ratio for death 1.48, 95% CI 1.19 to 1.85).

The alternative agents tranexamic acid (1.07, 0.8 to 1.45) and aminocaproic acid (1.03, 0.8 to 1.33) were not associated with any excess deaths.

The study used data from a registry of patients who had their surgery at one of 62 sites in North and South America, Europe, Asia, and the Middle East. The authors did their best to adjust for the inevitable differences between people who do and do not receive aprotinin, and they are fairly convinced that the drug is unsafe. The excess deaths persisted through various different analyses and even seemed to be dose related. As two safe, effective, and cheap alternatives exist, surgeons should probably think twice...
before using aprotinin during coronary artery surgery, the authors conclude.

*JAMA 2007;297:471-9*

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**Use clomifene alone for subfertile women with polycystic ovaries**

Women with polycystic ovary syndrome are often subfertile. They don’t ovulate much, if at all, and this basic reproductive problem is made worse by metabolic disturbances such as hyperandrogenaemia, obesity, and insulin resistance. Clomifene is a safe and effective way of encouraging ovulation, and the insulin sensitiser metformin should also help. But in a large, rigorous head to head trial, clomifene was the clear winner, producing significantly more live births than metformin over six months (47/209 (22.5%) vs 15/208 (7.2%); P<0.001).

The combination of clomifene and metformin was better at inducing ovulation than clomifene alone, but this apparent advantage did not translate into significantly more live births (47/209 (22.5%) vs 56/209 (26.8%); P=0.31).

So, after a decade or so of promising small trials and at least one hopeful meta-analysis, metformin is not as useful as it once looked. This study’s authors and a linked editorial (pp 622-4) agree that clomifene alone should remain the standard treatment for subfertile women with polycystic ovaries. Side effects were evenly matched between the groups in this trial, except for multiple births. There were four sets of twins and a set of triplets among the women taking clomifene either alone or in combination. All 18 pregnancies in the metformin group were singletons.


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**Death by lethal injection an “abominable perversity”**

The death penalty is currently on hold in 11 US states after a series of grotesquely bungled executions that exposed serious deficiencies in the staff and facilities used for lethal injections. One district court judge from California has declared that death by lethal injection is officially “broken” and unless it’s fixed this form of execution will be ruled unconstitutional because of the extreme pain experienced by some prisoners during the procedure, says an article.

Execution teams are badly prepared and poorly trained, to the extent that one team in Alabama has said they sometimes use the “external carotid vein” and the “saphenous vein in the arm” for injections. Neither vein exists. In another state, the postmortem examination of one recently executed prisoner found chemical burns about 30 cm long in both ante-cubital fossae. The intravenous lines had been misplaced and the drugs delivered subcutaneously. He died slowly and painfully from creeping paralysis and suffocation.

Senior politicians and judges want the system fixed and have called on doctors and other health professionals to help. This would be morally wrong, says the article. Execution by lethal injection is an “abominable perversity of the tools of healing” and doctors should not kid themselves that getting involved will somehow make it better.

*Lancet 2007;369:352-3*

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**Monoclonal antibody helps clear psoriasis**

Interleukins 12 and 23 have both been implicated in the pathogenesis of psoriasis. So scientists developed a human monoclonal antibody to disable them, and tested it in 320 volunteers with moderate or severe disease. The antibody worked well. Twelve weeks after only a single small dose, more than half those treated were at least 75% better (52% (33/64), compared with only 2% (1/64) of controls who had a placebo (P<0.001). Increasing the dose or repeating the treatment at weekly intervals improved response rates even more. Overall, up to 81% (52/64) of treated participants got at least 75% better, and up to 52% (33/64) got at least 90% better, compared with 2% (1/64) of controls. Patients who had the active treatment reported a clear and significant improvement in quality of life.

This phase II trial was reasonably big, but not powerful enough to establish the safety or otherwise of this new and experimental treatment. Treated participants had more serious adverse events than controls during 36 weeks of follow-up, but the difference wasn’t significant (9/252 (4%) vs 1/67 (1%)). Among the treated patients there were two infections, two heart attacks, three cancers, and a stroke. The only serious events among controls were one basal cell skin cancer and one acute admission for aggravated psoriasis.


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**Many doctors would keep quiet about morally controversial treatments**

In training and in practice doctors come across many treatments that are legal but morally controversial. Providing contraception for minors and performing abortions are two obvious examples. Are doctors who object to these treatments obliged to tell patients about them, explain their objections, and refer them on? In a survey of 1144 American doctors, most said yes to all three (86%, 63%, 71% respectively). But a substantial minority felt they had no obligation to tell patients about morally controversial treatments (8%) or to find a doctor more willing to treat them (18%). The rest were undecided.

The researchers surveyed a random sample of all US doctors and got a response rate of 63% (1144/1820). If the respondents are representative, the authors estimate that up to 100 million Americans are being cared for by doctors who might block their access to effective and legal treatments.

The women in this survey had a more liberal attitude than the men, possibly because most controversial treatments involve women’s reproductive health. Religion was also an important determinant of response. The religious doctors were happy to discuss their moral objections with patients but less likely than those without religious convictions to disclose all treatment options (odds ratio 0.3, 95% CI 0.2 to 0.5) or refer a patient elsewhere for a controversial treatment (0.3, 0.2 to 0.4).

*N Engl J Med 2007;356:593-600*
WHO guidelines state that it will not accept money from drug companies, but how rigorous is it in enforcing this?

Michael Day investigates

Serious questions have been raised about whether the World Health Organization is using patient groups as a conduit for receiving proscribed donations from the pharmaceutical industry. Email correspondence passed to the BMJ seems to show that in June 2006 Benedetto Saraceno, the director of WHO's department of mental health and substance abuse, suggested that a patient organisation accept $10000 (€5000; £7000) from GlaxoSmithKline (GSK) on WHO's behalf. The sum was then to be passed on to WHO—ostensibly with the intention of obscuring the origins of the donation. GSK withdrew its offer of funding when it learnt that acceptance was conditional on obscuring its origin. However, the email exchange indicates that other sums of money originating from drug companies may have already been channelled to WHO through patient groups.

When asked about this correspondence, Dr Saraceno told the BMJ that his email to the patient organisation was “clumsily worded” and that he had “never intended to solicit donations from the pharmaceutical industry through the patient organisation.” In the email dated 16 June 2006, Dr Saraceno thanks Mary Baker of the European Parkinson's Disease Association (EPDA), for raising the $10000 “requested by the WHO.” The money was to have funded a report on neurological diseases, including Parkinson's disease, for which GSK produces treatments.

Dr Saraceno then seems to advise Mary Baker on how to get round the WHO's rules forbidding drug industry funding. “Unfortunately,” he says, “WHO cannot receive funds from the pharmaceutical industry. Our legal Office will reject the donation. WHO can only receive funds from Government agencies, NGOs, foundations and scientific institutions or professional organisations. Therefore, I suggest that this money should be given to EPDA and eventually EPDA can send the funds to WHO which will give an invoice (and acknowledge contribution) to EPDA, but not to GSK.”

He adds: “This is in line with what we have done so far with other contributions to the report which all are coming from other professional organisations,”—suggesting that less than transparent transactions were the norm for this fundraising operation.

WHO guidelines

According to paragraph 13 of the WHO's guidelines on interactions with commercial enterprises, which deals with cash donations, “WHO should avoid indirect collaboration (particularly if arranged by a third party acting as an intermediary between WHO and a commercial enterprise).” Paragraphs 15 and 16 of the guidelines state that funds may not be sought or accepted from commercial enterprises that have a direct commercial interest in the outcome of the project and that caution should be exercised even when the business has an indirect interest. And paragraph 27 says that for reasons of transparency, contributions from commercial enterprises must be acknowledged.

Richard Nicholson, editor of the Bulletin of Medical Ethics, said: “It would be very bad indeed if the WHO were trying to obtain money surreptitiously from drugs companies. Unfortunately it's also under-funded, and sadly there's always going to be the temptation of senior officials who ought to know better than to accept such money. But they should remember that there's always a price attached to such funding.”

Even the senior GSK official who offered the money to the EPDA professes outrage at the secretive means by which WHO attempted to obtain the drug company grant. Alastair Benbow, vice president of GSK,
withdrew the offer of funding went he learnt of Dr Saraceno’s response to GSK’s proposed donation. In an email to Mary Baker of 19 June 2006 he said: “Unless I am misreading something here it sounds like they [WHO] will accept funding from you but not from the industry. Worse than this, they will accept funding from you even if they know it originally came from us, in order to bypass their own rules. This is hypocritical in the extreme. It makes a complete mockery of attempts at transparency, which should be welcome, and which the WHO have called for.”

Some critics said the vehemence of Dr Benbow’s criticism of the WHO reflected the sensitive nature of drug companies’ relationship with patient groups. Tim Reid, European director of Health Action International, which campaigns for the rational and ethical use of drugs, said: “Patients’ groups are so close to the industry, that they might as well be taking their money straight out of the drug company advertising budgets.” Graham Dukes, a former head of the WHO’s medicines programme for Europe, said: “We know that patient groups are heavily influenced by drug companies. In the case of attention deficit hyperactivity disorder, for example, we know that the industry effectively financed the whole campaign—and we’re not absolutely sure the condition actually exists.”

Dr Reid added that there were now moves afoot in the European Union to sanction direct to consumer advertising in the form of private-public partnership promotional campaigns. For this reason the industry was keen for everything to be very transparent. “That’s not to say we support such a move in Europe,” he said. “There may be some degree of transparency, but that doesn’t mean it’s necessarily a good source of information for consumers.”

**WHO cannot receive funds from the pharmaceutical industry.**

Our legal office will reject the donation. WHO can only receive funds from Government agencies, NGOs, foundations and scientific institutions or professional organisations.

Therefore, I suggest that this money should be given to EPDA and eventually EPDA can send the funds to WHO which will give an invoice (and acknowledge contribution) to EPDA, but not to GSK.

Email correspondence seen by the *BMJ*, suggesting a patient organisation should accept $10 000 on WHO’s behalf.
Backtracking
A copy of Dr Benbow’s email was forwarded to Dr Saraceno, who sent a further email to Mary Baker on 20 June seeking to explain his previous email to her: “It is obvious that my reply to your initial message was misunderstood and misinterpreted,” he wrote.

“As I stated very clearly in my message to you, WHO cannot receive funds from the pharmaceutical industry, but can receive funds from a variety of other organizations including NGOs, such as EPDA, whenever there is no conflict of interests. My suggestion that GSK should give funds to EPDA might have been clumsily worded; my intention was to convey that GSK can raise funds for its activities from a variety of sources (including the pharmaceutical industry) and use its funds for a variety of purposes (including giving donations to WHO). This is not the case for WHO.

“At any rate, any donation can only be accepted in accordance with WHO rules and regulations, and precisely this has been the case with all other NGOs whose contributions are extremely useful to the production of the publication ‘Neurological Disorders: Public Health Challenges’. Therefore, in order to avoid a perception of conflict of interests for WHO, I would prefer to decline any financial support for this publication, particularly since I have never asked your NGO to mobilize funds from pharmaceutical companies, and I now find myself in a situation that I have not solicited.”

When asked about this correspondence, Dr Saraceno told the BMJ: “I was not soliciting any funds. I was in the process of preparing a new report about neurological disease in poor countries, and I was looking for some funding to help with the report.”

WHO mental health and substance abuse director Benedetto Saraceno

“Unless I am misreading something here it sounds like they [WHO] will accept funding from you but not from the industry. Worse than this, they will accept funding from you even if they know it originally came from us.”

Mary Baker of the European Parkinson’s Disease Association

“Dr Saraceno said he needed money for the report, and I said I knew where I might be able to get it. I approached GSK… they said they would be able to give us the money for the report.”

Mary Baker of the European Parkinson’s Disease Association

“Dr Saraceno said he needed money for the report, and I said I knew where I might be able to get it. I approached GSK… they said they would be able to give us the money for the report.”

Mary Baker of the European Parkinson’s Disease Association

Funding pressure
However, as Ralph Edwards, the director of the WHO’s drug monitoring centre in Uppsala, Sweden, warns, it wasn’t only the mental health division that was being pushed by financial necessity to get closer than was desirable to the drug industry. “These days it’s so hard to find anyone completely free of the pharmaceutical industry. A couple of years ago we wanted to publish a safety report on Lapdap [chlorproguanil-dapsone], the combination malaria treatment. The WHO’s tropical disease research group had developed the treatment jointly with Glaxo, but Glaxo weren’t happy with what we wanted to publish.

“This was a bad situation and it was very, very difficult. We raised the issue with WHO because we thought that there had not been enough safety studies done. We managed to get the report published eventually, after a lot of lobbying and pressure—but it was delayed for more than a year,” said Dr Edwards.

“It’s an example of how tortuous it is working with pharmaceutical industry money. GSK stated at the time of the dispute that it “totally disagrees with the assertion that there is concern about Lapdap” and maintains that it “is an effective and well-tolerated therapy for the treatment of malaria.” The company claimed that “A draft [of the WHO Lapdap report] which GSK was given sight of contained many inaccuracies.”

When the BMJ referred its concerns about the Saraceno correspondence to WHO, a spokesman replied: “It’s astonishing that the BMJ thinks there’s a story here. Dr Saraceno sent a second email saying that he had not meant to ask for the money. So I don’t think there’s anything to answer.”

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Competing interests: None declared.


Until 2004, general practitioners were responsible for the care of their registered patients 24 hours a day and seven days a week. They did not have to provide that care themselves but remained responsible for arranging and coordinating it. As a result of the new GP contract, most general practitioners have now opted out of this responsibility and are contracted to work for the NHS from 8 am to 6 pm and for only five days a week. Since these changes, out of hours care has become more expensive and less efficient, with a profusion of different arrangements across the country. Attempts are being made to replace GPs with a multitude of people from different disciplines, and care is being fragmented proportionately.

How did we get into this mess? There is no doubt that GPs were becoming overwhelmed by an increasing out of hours workload, with people being encouraged to expect that medical care should be as convenient and accessible as a supermarket. However, the government is seeking to portray GPs as having turned their backs on out of hours care to the detriment of patients, and this is a dishonourable attempt to rewrite history.

At the time of the new contract, most GPs had already organised themselves into larger cooperatives of groups of practices, which reduced the burden on single practices. Perversely, the new contract awarded little money for continuing to cover out of hours care. As some GPs began to opt out, cooperatives were obliged to pay much more realistic rates to doctors undertaking shifts so that, for those practices remaining opted in, the cost became unsustainable and they too were obliged to opt out in turn. The exception was SELDOC, the co-op for the GPs of Lambeth, Southwark, and Lewisham. SELDOC set out to provide an all inclusive out of hours service for its members for an annual payment of less than the cost of opting out. Remarkably, they have succeeded and, as a direct result, more than 90% of GPs in these three London boroughs remain opted in for 24 hour responsibility. This suggests that the vast majority of GPs would have retained 24 hour responsibility if they had not been financially penalised for doing so. The opt-out is a one way process: having opted out, practices are not allowed to opt back in again. Why should this be so? The only explanation that makes sense to me is that the government wished to break the GP monopoly and to open up GP services to commercial competition. This is why the individual doctor’s name has been taken off the medical card and it is why the opt-out is one way. Far from turning their backs, it seems that GPs may in fact have been pushed out.

What can be done? What are the principles on which a sustainable out of hours service should be based? Firstly, a service funded through general taxation should be predicated on need rather than convenience. I cannot be alone in my willingness to pay tax to ensure that someone taken acutely ill at night gets immediate and appropriate care and my unwillingness to pay for someone to discuss their problems of ear wax at 10 pm.

Secondly, as many people as possible should be asleep at night. We know that working at night undermines health and, as far as possible, the NHS has a responsibility to protect the health of those who work for it. The bulk of out of hours work is triage and immediately necessary treatment. We know that triage is most effective when it is undertaken by the most highly trained personnel and, in the out of hours context, this means GPs. There is no need for the full panoply of health professionals to be available out of hours and there are both personal and financial costs to attempting it.

Thirdly, the concept of personal responsibility should be reintroduced into out of hours care so that there is someone taking a personal interest in the quality and outcome of each episode of care. It is becoming increasingly difficult to coordinate the care of a practice’s registered patients when responsibility is limited to 10.5 hours a day.

Finally, we should acknowledge that if continuity of care is important during the day it is also important at night.

The out of hours problem seems to me to be symptomatic of a wider malaise in the health service that has developed as responsibility vested in individuals has been replaced by elaborate bureaucratic structures. Current systems fail to acknowledge the central transaction of medical care, which occurs when one named individual takes responsibility for the care of another. This is a personal as well as a contractual undertaking.

When people are ill, the fear, loneliness, and suffering are always much more overwhelming at night when there are inevitably fewer distractions and less human company and when, as Philip Larkin put it, “the dread of dying, and being dead, flashes afresh to hold and horrify.” It cannot be beyond the capacity of the NHS to devise and fund a system of out of hours care based on smaller rotae of GPs covering smaller populations so that the possibility of some sort of continuity, of seeing a familiar face, is enhanced. A first essential step would be to allow GPs to opt back in to 24 hour responsibility without financial penalty.

Iona Heath is a general practitioner, London ialon.heath@dsl.pipex.com
Hunting down the H5N1 virus

The avian influenza outbreak in Suffolk has cast an uneasy light on the public health risks of modern poultry production practices.

What is the root cause of the outbreak?
Although the infected processing plant reopened last week, government investigators are still trying to root out the cause of the H5N1 virus outbreak in Suffolk, which led to the culling of 160,000 birds earlier this month.

Initially, the finger of blame had pointed to the infected droppings of migrating wild birds. There had been an outbreak of H5N1 among captive geese in the Csongrád region of Hungary in January, but there was no obvious link to the outbreak at the Holton farm, which is owned by UK poultry tycoon Bernard Matthews.

By the eighth day of the outbreak, genetic tests confirmed that the Suffolk virus was the same pathogenic Asian strain found in Hungary. That in itself didn’t prove that there was a direct link; the infection still may have come from a third country. But it had also become clear that Matthews not only had a processing plant in Hungary but that a consignment of partly processed turkeys, originating 30 miles from the source of the Csongrád outbreak, had been delivered to the Suffolk plant days before birds there had started getting sick.

The key question asked in the press at this point was, how could the virus have transferred from poultry meat imported from Hungary into live birds at the Holton farm?

According to the Telegraph, “Because imported meat is kept cold, any virus would have survived the journey.” The Sunday Times reported that government investigators were examining whether any such infected meat was then left out in the open in Suffolk. “If the meat was infected, the virus could have been picked up by wild birds and rats and carried into the rearing sheds and the wider countryside.”

Other possible routes of infection are dust, feathers, and dirt on vehicles, equipment, packaging, or the boots of workers.

Is H5N1 in the human food chain?
Despite saturation coverage of the bird flu outbreak, there have been no signs of panic by the media, or from consumers, about the safety of eating poultry and eggs. The Food Standards Agency’s advice is that properly cooked poultry, even if it is infected, is safe to eat.

No Bernard Matthews branded goods have been recalled from the shop shelves. The Times reported a drop in poultry sales of only 10% at supermarket chains Sainsbury’s and Morrisons, and Tesco claims only a slight reduction.

Andrew Wadge, chief scientist at the Food Standards Agency, posted comments during the outbreak, emphasising that there was currently no threat to public health. “As far as bird flu goes, the science shows that it isn’t contracted by eating food. Flu viruses rely on receptors in the body to cause illness, and those that flu latch onto are generally found in the respiratory tract. Those people who have contracted bird flu—currently about 270 worldwide—have been in very close contact with sick birds.”

Even if someone did eat an infected product, a number of factors should prevent them from becoming infected, he added. “Firstly, cooking meat thoroughly is more than enough to kill the virus. Secondly, the body has a number of other barriers that would protect us, including saliva, gastric acids, and the lack of suitable receptors in the gut.”

Media reaction
Officials continue to investigate possible breaches of biological security measures at the Holton farm, but the exact cause of the outbreak may never be known. The scare has given rise to questions in the media over where the main threat to public health lies. Was the blame initially put on wild birds to keep the reputation of big business farming intact?

Under the headline “Time to ruffle some feathers,” an Independent on Sunday opinion...
piece collared intensively farmed poultry as the main health risk. “Industrialised farming not only involves large, overcrowded flocks of potentially contagious birds, but poultry products are transported around the world, sometimes in poor conditions and with poor bio-security. This means a hard look at the scale and intensity of what is becoming a global business is needed.”

In the *Sunday Times*, an unnamed ornithologist and government adviser said the wild bird link had always been unlikely. “I find it quite incredible. Everybody who knows anything about birds would be shocked if this was the source. They would be scratching their heads and going ‘man, this is bizarre.’”

The health scare has also ignited concerns about food labelling. Under UK law, food that is processed in the UK can be labelled as made in the UK. Hence, a turkey reared in Hungary but processed in the UK can legally be sold as British meat.

The *Telegraph*, in a critical feature called “Not Made in Britain,” questioned the ethics. “For millions of people, cheap white meat has replaced red meat as a healthy option. But the truth is that cheap white meat comes with a hidden price tag. As we are now seeing.” An *Observer* editorial warned that “Bird flu is the price of your £5 roast.”

The outbreak also gave rise to some wild speculation, including an alarming story in the *Sunday Times*: “If bird flu grips the nation, doctors will need guns.” This item suggested that doctors treating patients who had avian flu may need security guards to shield them from violent relatives should they be forced to decide which patients to prioritise during a pandemic.

What next? The outbreak comes during a “relative lull in cases” in European poultry, according to Reuters, since hundreds of turkeys were infected and died in France last year. Although the UK outbreak had the potential to become lethal—if the virus had developed the ability to spread to humans—the real threat from avian influenza lies elsewhere, in the developing world, commentators warned.

In a leader article, the *Observer* said: “While governments in rich countries have been worrying about whether or not their millions of doses of vaccine will suffice, virtually nothing has been said about the fate of poorer countries. Deaths from bird flu in developing countries are almost certainly going undiagnosed. Indonesia suffers regular human deaths from bird flu, but has not implemented basic quarantine measures. China is stubbornly closed to international attempts to track the disease. Already blighted by Aids and malaria, many African societies may be devastated by a flu pandemic.”

Rebecca Coombes, journalist, London
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How much are doctors worth: how much do doctors really earn?

“How long is a piece of string?” goes the old saying; how do you determine the value of anything? There’s the old cliché about supply and demand; there’s also the old marxian notion about the social determination of the “value” of money and commodities. And there is of course the time honoured labour theory of value.

So, how do you determine value? For example, how valuable is education? Most people would say that a good education is very valuable—then, how is it that teachers are so poorly paid if what they do is so valuable? Most people would agree that good medical care is very valuable—so why is that fuss about doctors being paid well, why the endless scrutiny? Why do we not see the same preoccupation with pay for lawyers and businessmen?

With education and health, we speak about value to society. In the case of business, accountancy, and law, value refers to how much profit can be generated. Those who provide socially valuable services—such as nurses, teachers, firemen and doctors—are expected to be “dedicated” rather than interested in money; therefore their claims to better remuneration are taken as rather distasteful since their goal is supposed to be to provide a service and perform a “duty.” Coupled with that, at least in the case of doctors, is a traditional notion that “doctors are rich.” Some doctors are rich, and relative to other equivalent professions, doctors might once have been comfortable. It is no longer true that in general doctors are rich. But doctors are important, and there has been a campaign in recent years to render them unimportant, disempower them, and control them. I know of no doctor who gets a multi-million pound sign-on bonus, nor any who after being struck off might walk away with a multi-million pound severance package. Yet these practices are common in the upper echelons of industry among heads of companies.

This debate is full of ideologically determined straw men. It should be clear that no one has had an honest discussion about value or values. The same people who have the knives out for doctors’ earnings are rolling out the proverbial red carpet for those in the finance sector. This should tell us all what values are considered more important. It does not seem to cross too many pundits’ minds that these values are utterly distorted.

The same honesty should apply to discussions about who provide essential, valuable services to our society. Perhaps if doctors, firemen, nurses, teachers, and cleaners withdrew their services for a while, their value might be appreciated.

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Competing interests: None declared.

This article was posted on 5 February as a rapid response to Michael Day’s article “So much do doctors really earn?” (BMJ 2007;334:234-7). At the rapid responses to this article can be viewed at www.bmj.com/cgi/letters/334/7587/23.

The Quality and Outcomes Framework has rewarded GPs for doing work that they don’t like and that their patients don’t want or value. Part of the QOF has made us streamline the professionalism in the back offices. It has put us through hoops to improve processes such as staff management and risk assessment.

The other half of the QOF has rewarded us for improving surrogate outcomes such as blood pressure and cholesterol in high risk patients. It has also rewarded us for clinical work that is less evidence based, like providing checks for people with newly diagnosed cancers.

What the QOF has not done is ask us to provide, and fund, what patients really want. Sadly, people don’t value preventive medicine. People don’t appreciate a GP’s surgery tracking down men in their 40s who have been lost to follow-up after a coronary bypass operation. Even less do they value their GP’s work in preventing them from developing heart disease in the first place. What our patients want is immediate access 24/7.

The QOF has made us work harder. I believe we earn the money we are paid. I am dismayed that our employer is out to discredit the contract it has foisted on us—and that the media is gunning for the workers rather than the employer.

My solution would be to renegotiate the QOF. Throw out the bathwater, but keep the baby of rewarding performance in areas of evidence based medicine. Throw out the clinical areas that look like they were decided by lobby groups. Throw out most of the practice management and allow us to manage ourselves. Finally, make GPs work evenings and weekends. And then leave us alone for 10 years. Please.

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Competing interests: IQ is a GP principal in England, enduring and benefiting from the QOF in equal measure.

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Are we spending too much on HIV?

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YES

HIV is receiving relatively too much money, with much of it used inefficiently and sometimes counterproductively. Data from the Organisation for Economic Cooperation and Development show that 21% of health aid was allocated to HIV in 2004, up from 8% in 2000.1 It could now exceed a quarter. Yet HIV constitutes only 5% of the burden of disease in low and middle income countries as measured by disability adjusted life years lost (DALYs),2 less than that for respiratory infections, perinatal conditions, or ischaemic heart disease. It causes 2.8 million deaths a year worldwide—fewer than the number of stillbirths, and much less than half the number of infant deaths.3 More deaths are attributable to diabetes than to HIV.3

Even within sub-Saharan Africa, HIV funding is out of balance. HIV is the biggest single killer, contributing 17.6% of the burden of disease in 2001.4 But it received 40% of all health aid in 2004.5 6 Although incidence and prevalence have peaked in Africa,7 HIV aid to Africa increased by an average of $240m (£123m; €185) a year from 2001 to 2004.5 Global HIV expenditure increased by an average of $1.7bn a year in this period.8 The 2006 UN General Assembly high level meeting on AIDS called for annual HIV expenditure in low and middle income countries to rise from $8.3bn in 2005 to around $23bn by 2010.9 If, as now, aid constitutes a third of this expenditure, and if non-HIV health aid continues to increase at current rates, HIV would then claim half of all health aid.

Are HIV interventions so cost effective that they justify this disproportionate spending? No, they are not. Costs per DALY averted are lower for immunisations, malaria, traffic injuries, childhood illnesses, and tuberculosis.10 11 Much HIV money could be spent with more certain benefits on, for example, bed nets, immunisation against pneumonia, or family planning.

An exceptional disease?

Why has this happened? One factor surely has been the success of HIV lobbies and activists in promoting HIV as exceptional.12 In rich countries, HIV has become the crusade of the famous, fashionable, and influential. In high prevalence countries, HIV affects the middle classes more than the poor13 and is of more concern to them: middle class children do not die from pneumonia or malaria and middle class women do not die in childbirth.

The exceptional status accorded HIV, and its excessive relative funding, has produced the biggest vertical programme in history, with its own staff, systems, and structure. This is having deleterious effects apart from underfunding of other diseases. These include separating HIV from sexual and reproductive health and creating parallel structures that constrain the development of health services. National AIDS commissions, country coordinating mechanisms, UN agencies, etc are tripping over each other for funds and influence.

HIV is also affecting adversely the organisation of health services. Funding for prevention of mother to child transmission, for example, is producing separate structures rather than strengthening everyday antenatal care and maternal child health by making testing and prevention part of the routine work of nurses and midwives. Also, well funded HIV programmes attract staff from other health services, aggravating chronic shortages.

Because HIV interventions are not integrated into health services, this excessive spending is not effective. Nevirapine or other prophylaxis is given for only 9% of pregnancies in women with HIV, and only 1.5 million people are receiving antiretroviral drugs.8

What is all this money being spent on? Much of it goes on “multisectoral” activities and “mainstreaming” HIV into just about every social activity. These have become the emperor’s new clothes of public health. The World Bank’s evaluation notes: “projects are complex with many participants engaged in activities for which they have little capacity, technical expertise, or comparative advantage.”11 Much money is wasted in areas that reflect the interests of those on the AIDS industry payroll more than evidence. It could be more effective if used to strengthen public health, which already provides preventative interventions in other sectors, cooperating with local authorities and ministries. Moreover, claiming HIV as exceptional may have increased stigmatisation.11

Health systems not diseases

More health aid should be used to strengthen health systems that can integrate funding at country level and allocate it to evidence based priorities through effective delivery organisations, whether state or private. Sector wide approaches try to do this by pooling aid and government funding and spending it to an agreed plan.14 They should be more independent of government and more representative—able to drive a big shift to market mechanisms that create real incentives to deliver and use the mass media to empower poor consumers to influence demand and improve self medication.

A global basket fund is needed to transfer sustainable and predictable funding to countries, avoiding the hugely unpredictable aid flows from fickle donors that make planning impossible.15 The Global Fund to Fight AIDS, Tuberculosis, and Malaria could abandon disease dedicated support to become this fund. Its participation in sector wide approaches would give a big boost to rational resource allocation. Improving health systems should form the platform for action and research now, transcending HIV and other disease-specific programmes.16

More deaths are attributable to diabetes than to HIV

Competing interests None declared.
Billions of pounds are being spent on the fight against AIDS in developing countries. **Roger England** believes that much of the money could be better used elsewhere, whereas **Paul de Lay and colleagues** argue that current spending is not enough.

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AIDS is widely acknowledged as a public health crisis and is now one of the make or break forces of this century, as measured by both its actual effect and potential threat to the survival and wellbeing of people worldwide. In 2005, the *UN Human Development Report* concluded that “the AIDS pandemic has inflicted the single greatest reversal in human development.” In that year, AIDS caused a fifth of deaths globally in people aged 15-49 years. Within the next five years, every seventh child in the worst affected sub-Saharan countries will be an orphan, largely because of AIDS. By 2010, an estimated 9 million people will need antiretroviral treatment.

**Unmet need**

Much has been done to raise awareness and resources. However, the Joint United Nations Programme on HIV and AIDS (UNAIDS) estimates that resources currently pledged are only half what is needed for a comprehensive response. In 2006, $9bn (£4.6bn; €7bn) was available for the AIDS response but the real need was estimated at $15bn. This sum represents the costs for prevention, treatment, and support services; human resources; and infrastructure. The bulk of the funding is additional to amounts spent on other aspects of health development.

Resources are woefully short in almost every area of public health in low and middle income countries. HIV funding should provide an opportunity and entry point for strengthening health and social service systems if it is used appropriately. For example, large amounts have been spent on laboratory networks, universal precautions, blood bank safety, and safe injections, as well as focusing on the wellbeing and training of health workers, doctors, and nurses and not only those working in AIDS.

In 2003, the total health expenditure in high income countries was $3.3 trillion, while in low and middle income countries total health expenditure was $427bn. The percentage spent on HIV from all sources including donors, governments, international foundations, and affected people was just 1.1% of these health expenditures in low and middle income countries.

The resources spent on HIV must be proportionate to the overall disease burden, adjusted by deferred disease and mortality that will result from the current HIV prevalence. Recent estimates by the World Health Organization of the disability adjusted life years (DALY) indicate that 31% of communicable, maternal, perinatal, and nutritional conditions were attributable to HIV in 2002. As a sign of this increasing trend, in 2003 HIV accounted for the third highest amount of DALYs in low and middle income countries. By 2030 it will be the third highest contributor of DALYs globally.

We urgently need stable, predictable, international funding for public health and development. Volatile funding flows from donors, often reflecting priorities that are not shared by national governments, make it difficult to implement national plans. Many countries are reluctant to include these uncertain future revenues in the national planning systems. In addition to ensuring predictable and sustainable international funding, greater efforts are needed to make sure that countries that are able to do so invest more of their own money in AIDS and health in general. Currently around one third of the total AIDS spending is from domestic sources.

**Multisectoral response**

HIV is a development problem with multisectoral causes and effects. It therefore requires a similar response, with many components lying outside the health sector. A large proportion of funding, especially for prevention, is actually for activities outside the health sector. Some of these activities tackle social issues that underlie vulnerability to HIV infection. HIV is highly stigmatised in many countries, often affecting marginalised populations such as injecting drug users, sex workers and their clients, men who have sex with men, migrants, and mobile populations. Both donors and governments are often reluctant to commit resources to help people whose activities may be subject to social disapproval.

Poor coordination between different stakeholders in affected countries impedes effective spending. The problem is compounded by weak institutions and regulatory policies, poor governance, and in some cases corruption. UNAIDS is promoting the principle of a single, country owned strategic plan coordinated by a single national authority, with an integrated system for monitoring and evaluation.

The response to AIDS needs to be seen in the context of international commitments to the millennium development goals, which also call for progress across many other development priorities. HIV threatens many of these goals, especially those related to poverty and health. The cost of inaction against AIDS is huge, far greater than for any other public health crisis. Current costs are so high because of the inadequacy of previous investments. They will be higher tomorrow if we continue to underinvest.

**Competing interests:** None declared

References are in the full version on bmj.com
Uninsured in America: problems and possible solutions

Failure to ensure access to health care for all lies at the heart of the US failure to achieve value for money, says Karen Davis

The United States is the only major industrialised nation without universal health insurance, and coverage has deteriorated in the past six years. The consequences are increasingly well known: inequities in access to care, avoidable mortality and poor quality care, financial burdens on people who are uninsured or underinsured, and lost economic productivity. The US spends twice as much on health care as the median industrialised nation but does not systematically achieve the best quality care (table). What are the prospects for reform?

Trends in uninsured and underinsured

The US has a mixed public-private system of health insurance. It comprises:

- Federal Medicare programme, covering people aged 65 and over and those who have been disabled for two years or more (12% of population)
- State Medicaid programmes—covering children from low income families and in some states their parents as well as providing long term care and cost sharing for acute care for Medicare beneficiaries with low incomes (13%)
- Voluntary employer based private insurance—covering many working families (54%)
- Individual insurance (5%).

The remaining 16% of the population is uninsured. The number of uninsured people has increased from 40 million in 2000 to nearly 47 million in 2005. Coverage varies widely between states and has deteriorated in recent years (figure).

Nearly all of the growth in the uninsured is among people aged 18 to 64, most of whom are working. The average family premium for employer based cover is $11 480 (£5900; €8800) a year. Employers have cut back on coverage and benefits in response to rising healthcare costs and adverse economic circumstances. Enactment of a state children’s health insurance programme in 1997 has provided insurance for five million children from low income families, offsetting the fall in cover of dependants through voluntary employment based insurance.

Access, quality, and equity implications

The hidden consequences of failure to ensure universal coverage in the US are well documented. The Institute of Medicine estimates that 18 000 lives are lost annually as a consequence of gaps in coverage. It calculates the annual cost of achieving full coverage at $34bn-$69bn, which is less than the loss in economic productivity from existing coverage ($65bn-$130bn annually). Expanding coverage would disproportionately help people on low incomes, who make up two thirds of the uninsured, thus increasing equity in access to health care and health outcomes.

In the US market based system, gaps in health cover contribute to underuse of effective services. People who are uninsured or underinsured are more than twice as likely to report going without needed care because of costs. When they do receive medical care, they often spend a high fraction of income on out of pocket medical expenses and face financial difficulties. Uninsured people are often the only ones charged full price for health care; they do not benefit from discounts from providers negotiated by managed care plans, further raising access barriers and debt burdens for those who become sick.

What is less well known is that the uninsured are also less likely to receive high quality care and efficient care. Those who are uninsured are more likely to report poorer quality care, and chronic conditions are less likely to be properly managed. Use of emergency rooms and inpatient hospital care is twice as high for those with chronic conditions who are uninsured as for those who are continuously insured (35% v 16%).

Low income and uninsured people are less likely to have a regular source of care, and when they do

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Healthcare indicators for eight countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Health expenditures per capita ($)</th>
<th>Life expectancy at age 60(%)</th>
<th>Deaths amenable to medical care/100 000 population</th>
<th>Access problems (%)</th>
<th>Breast cancer 5 year survival (%)</th>
<th>Myocardial infarction 30 day hospital mortality (%)</th>
<th>Deaths from surgical or medical mishaps/100 000 population (2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2876</td>
<td>88</td>
<td>34</td>
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<td>12.0</td>
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<td>79.7</td>
<td>8.0</td>
<td>0.5</td>
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<td>United Kingdom</td>
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<tr>
<td>United States</td>
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<td>88.9</td>
<td>14.8</td>
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</tr>
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*Average of male and female healthy life expectancies. †Percentage of adults with health problems who did not fill prescription or skipped doses, had a medical problem but did not visit doctor, or skipped test, treatment, or follow-up in the past year because of costs.
receive care it is less well coordinated.9 For example, uninsured people are more likely to report receiving duplicate tests. Their medical records are less likely to be available when they seek care, and they are more at risk of receiving poor quality care, such as delays in notification of abnormal laboratory test results.

Prospects for action
Public and healthcare opinion leaders, including business, labour, and managed care executives, unsurprisingly put expanding health insurance coverage at the top of their healthcare priorities for the US President and Congress.10 11 Despite this, there is little prospect that the federal government will legislate. This partly reflects the fact that uninsured people are less likely to vote and have no organised advocacy.

Another barrier is that Congress is deeply divided along political party lines, making bipartisan action difficult. Democrats favour comprehensive solutions expanding public programmes and employer based coverage whereas the President and many Republican leaders favour a market based solution, moving towards increased out of pocket payments to encourage consumers to be cost conscious and shop for cheaper health care.

The federal budget is in deficit, and tax revenues as a percentage of the gross domestic product are at their lowest point in 40 years as a result of deep tax cuts over the past six years. Funding universal coverage is likely to require tax increases. National reform of health care cannot be achieved unless the federal government makes health care a higher priority than tax cuts or other spending priorities.

Another way of helping to fund expanded cover is to reinvest savings made through increased efficiency. One increasingly favoured strategy is to reform payment of providers so that it rewards efficiency as well as clinical quality and patient centred care.12 Although the evidence supporting pay for performance is limited, it would begin to align financial incentives for providers with the desired results. If designed appropriately, it would move away from fee for service to population based or episode based payment.

State initiatives
Some encouraging signs are coming from selected states. A mixed strategy for covering different groups of uninsured people is beginning to emerge. This includes expanding existing state programmes to cover low income adults as well as children; creating an insurance pool for small businesses and the self employed, with premiums subsidised to make cover affordable for workers on low wages; and requiring employers to either provide cover for employees or contribute to a fund to finance cover for working people.

In April 2006, Massachusetts enacted a plan to make cover affordable for all uninsured residents. It adopted the principle of shared financial responsibility, mandating that everyone must purchase health insurance and requiring employers to provide health benefits to workers or pay an admittedly modest $295 a year into a fund to help finance cover. State and federal funds are used to subsidise care for the poor; the Medicaid programme was expanded to cover children from families with an income up to three times the federal poverty threshold. The plan also created an insurance pool for small businesses and individuals. The big question is whether...

The US will have to tackle the perplexing problems of access, quality and cost
Suggested government actions to achieve universal health cover

Federal
Legislate to match state funding for cover of adults on incomes up to 1.5 times the federal poverty threshold
Allow small businesses and uninsured people to purchase cover through the Federal Employees Health Benefits programme
Require all businesses to either provide health benefits to all employees or contribute $1/hour of work towards cover under public programmes and require everyone to purchase cover
Extend Medicare programme to uninsured adults aged 55 to 64 and eliminate two year wait before disabled people are eligible
Revise Medicare’s payment system to reward higher quality and greater efficiency, with savings used to expand coverage
Revise the children’s health insurance programme to include adults on incomes up to 1.5 times the federal poverty threshold and children up to 3 times the threshold
Revise Medicaid’s payment system to reward higher quality and greater efficiency, with savings used to expand coverage

States
Revise Medicaid’s funding for states that have expanded the programme to cover adults on incomes up to 1.5 times the federal poverty threshold and children up to 3 times the threshold
Legislate to match state funding for cover of adults on incomes up to 1.5 times the federal poverty threshold and children up to 3 times the threshold

Key to success
Although these efforts are encouraging, most are taking place in states with relatively small uninsured populations. The plans all draw on federal funding through matching contributions under the state Medicaid programme and, in the case of Massachusetts, a waiver that provides additional federal funding. It will be difficult for states with much higher proportions of uninsured people to follow without specific federal funding to help cover the cost, but it will be interesting to follow the recent expansion proposal in California with this state’s relatively larger population and higher uninsured rate.

Recognising the need for federal financing and leadership (box), bipartisan bills have emerged in Congress that would provide federal funding for state expansion efforts. These proposals build on the Aaron-Butler proposal to test various strategies for achieving universal coverage in different states. Although these bills have not yet gained momentum, they are probably the most realistic possibility of success given that Congress is narrowly divided.

What is clear is that the problem is getting worse, not diminishing. The fragmented, uncoordinated healthcare system is plagued by high administrative costs and missed opportunities to control chronic conditions and prevent life threatening conditions. If the US hopes to achieve a high performance health system that is value for money, it will have to tackle the perplexing problems of access, quality, and cost and overcome considerable political and economic obstacles, as well as institutional resistance to change.

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Contributors and sources: This article is based on a presentation by KD to the US Health Services Research Professional Association in June 2006. KD was head of health policy for the US Department of Health and Human Services during 1977-81 and was chairman of health policy and management at Johns Hopkins School of Hygiene and Public Health.

Competing interests: None declared.

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When are randomised trials unnecessary? Picking signal from noise

The relation between a treatment and its effect is sometimes so dramatic that bias can be ruled out as an explanation. Paul Glasziou and colleagues suggest how to determine when observations speak for themselves.

Our knowledge of the effects of treatments comes from various sources ranging from personal clinical experience to carefully controlled trials. Although we are often wary of inferring the effects of treatments from evidence other than that from randomised controlled trials, we are all familiar with examples of situations in which confident inferences about treatments have been based on other kinds of evidence. For example, the first case series of peritoneal sepsis treated with sulphonamides1 2 provided striking evidence that these new drugs had important benefits: although some patients died, the proportions surviving serious infections (peritoneal sepsis, meningitis, etc) were substantially greater than predictions based on previous experience. These dramatic effects of sulphonamides were not observed in other conditions, however, and carefully controlled trials were required to distinguish confidently between moderate treatment effects and no material effects.2

To help us think about the circumstances in which randomised trials are unnecessary, we sought help3 in compiling a list of examples of treatments whose effects had been widely accepted on the basis of evidence from case series or non-randomised cohorts (box). We have considered three present day examples in more detail to help illustrate the basis for our conclusions:

Mother’s kiss technique—A child presented to a clinic with a plastic bead lodged high in one nostril. The general practitioner asked the nurse for forceps, but she asked him whether he had thought of trying the mother’s kiss technique.4 This entailed occluding the unblocked nostril while the mother blew into the child’s mouth. The bead was easily dislodged and retrieved in this way, and mother and child were both delighted.

Laser treatment of portwine stains—Portwine stains are present at birth. They can enlarge and change colour during childhood but are stable thereafter. The effects of a single laser treatment take about three months to be seen (after some initial inflammation has settled).5 Multiple treatments may be needed for optimum effects, but improvement is common after a single treatment.

Fundoplication for heartburn—One option for patients with reflux causing heartburn is fundoplication, where the upper part of the greater curve of the stomach is wrapped around the oesophagus to mechanically prevent reflux. One of the early case series of laparoscopic Nissen’s fundoplication showed dramatic results on both symptoms and objective findings.6 For example, 95% had abnormal pH and manometry results before surgery compared with 5% afterwards. In subsequent long term follow-up studies of symptoms, reflux was abolished in a similar percentage of patients and overall antacid use was reduced fivefold7

Prognosis: the background noise
The first step in assessing a treatment effect is to look at the background noise. From the evidence of one case should we now adopt the mother’s kiss technique as first line treatment for other children with nasal foreign bodies? The mother’s kiss technique is a clear example of a rapid effect (seconds) in a stable condition. The size of the effect can be calculated as a relative rate: it takes less than 10 seconds to see the effect of the mother’s kiss, compared with the hours beforehand (for 2 hours this is 720 periods of 10 seconds) with no movement of the foreign body. So the rate ratio of removal for a single case is:

\[
\text{Rate ratio} = \frac{\text{rate of progression during treatment}}{\text{rate of progression during non-treatment}}
\]

\[
= \frac{1/1}{(0.5/720)} = 1440
\]

(Recall that we replaced the 0 cure rate with 0.5, a half correction that allows for a rate between 0 and 1, providing a more robust estimate and avoiding...
**ANALYSIS**

**Stable and sudden change**

**Fluctuating and sudden change**

**Fluctuating and gradual change**

**Episodic and partial change**

**Different degrees of signal: noise in single patient**

**Fluctuating—for example, rheumatoid arthritis, eczema, and depression**

**Episodic—for example, migraine, asthma**

**Probabilistic (a possible future event)—for example, stroke.**

**Picking up the signal from the background noise**

However, not all treatment effects in stable conditions are so easy to demonstrate. The prognosis and the treatment effect interact as noise and signal, and the ease of identification of treatment effects depends on the signal to noise ratio (figure). The effects of hearing aids on social functioning and quality of life, for example, are less immediate and predictable than the effect on hearing itself and are detected most reliably by parallel group randomised trials. Gradual or delayed effects, such as improvement in speech after hearing aids, are usually less obvious than immediate effects.

Consider the example of laser treatment for a portwine stain—a more gradual effect but with a stable condition. If the portwine lesion has been unchanged for 10 years and then improves three months after treatment, then the relative rate of improvement in three month intervals is:

\[
\text{Rate ratio} = \frac{\text{rate during treatment}}{\text{rate during non-treatment}} = \frac{1/3}{0.5/120} = 80
\]

(again using a half correction for the stable period).

This is relatively convincing, although any remaining doubt about whether the portwine stain had really changed could be resolved (without randomisation) by taking a photograph every three months over the 10 years and asking blinded examiners to select the post-treatment photograph with the best appearance. Similar examples include Paré’s assessment, nearly four centuries ago, of the effects of a treatment for burns, and Williams and colleagues’ treatment of three yellow nails with topical vitamin E and three control nails with vehicle only.

Such proof becomes more difficult when the condition is fluctuating or intermittent—for example, with inhaled corticosteroids for asthma or antidepressants to prevent migraine. Here, individual cases and experience are liable to be misleading as there is as much noise as signal. In these circumstances, we usually need randomisation and other measures to reduce biases in order to distinguish treatment effects from the effects of biases, unless the effect is very large, as in laparoscopic Nissen’s fundoplication (our third example). Here the relative rate of abnormal manometry results before and after the fundoplication (our third example). Here the relative rate of abnormal manometry results before and after the fundoplication was 95%/5%=20 (exact numbers give a relative rate of 22 with 95% confidence interval 9.8 to 49). Long term follow-up several years after surgery shows a lasting reduction in the percentage of patients with reflux symptoms from 100% to around 5%, and a fivefold reduction in use of antacids. Given the size and rapidity of the change in these subjective and objective measures, fundoplication obviously works. Whether it works better than drugs or alternative operations is a different question, and one for which randomised trials are needed.

**The recent examples of hormone replacement therapy and β carotene show how evidence from sources other than randomised trials can lead us badly astray**

division by zero. Note also that an occasional spontaneous cure—for example, from sneezing—would still result in a large rate ratio.)

This relative rate represents a large signal to noise ratio and is also significant (P<0.01) because, under the null hypothesis, the chance that the cure occurred in the treatment period used out of 720 possible periods is 1/720. However, the apparent effect is likely to be an overestimate as we are likely to note and report the successes rather than the failures. To generalise, we need data derived from several carefully assembled case series. A search yields only one report of a case series, in which the mother’s kiss was successful in 15 out of 19 children. We think this is sufficient evidence to recommend use in practice without randomised trials. However, it clearly fails sometimes and it would be worth documenting why and doing randomised trials comparing techniques that are unlikely to have greatly different effects.

With stable or progressive conditions, rapid effects of treatment are easy to demonstrate—for example, the effects of removing a cataract on vision or of cholinesterase inhibitors for organophosphate poisoning. Many surgical procedures also fall into this category—for example, drainage of a pleural effusion or pneumothorax, any operation to arrest haemorrhage, repair of a hernia, and incision of a perianal haematoma.

To generalise further, we can try to predict the outcome (current prognosis) without treatment. This can be clear and easy for stable or progressive conditions but can be highly unpredictable in fluctuating or probabilistic conditions. Prognosis can be classified from most to least predictable as:

- **Stable**—for example, portwine stain, lodged foreign body
- **Progressive**—for example, otosclerotic deafness, cataract, many cancers
- **Spontaneously remitting**—for example, colds, viral rashes

- **Fluctuating**—for example, from sneezing—would still result in a large rate ratio.)

**Picking up the signal from the background noise**

However, not all treatment effects in stable conditions are so easy to demonstrate. The prognosis and the treatment effect interact as noise and signal, and the ease of identification of treatment effects depends on the signal to noise ratio (figure). The effects of hearing aids on social functioning and quality of life, for example, are less immediate and predictable than the effect on hearing itself and are detected most reliably by parallel group randomised trials. Gradual or delayed effects, such as improvement in speech after hearing aids, are usually less obvious than immediate effects.

Consider the example of laser treatment for a portwine stain—a more gradual effect but with a stable condition. If the portwine lesion has been unchanged for 10 years and then improves three months after treatment, then the relative rate of improvement in three month intervals is:

\[
\text{Rate ratio} = \frac{\text{rate during treatment}}{\text{rate during non-treatment}} = \frac{1/3}{0.5/120} = 80
\]

(again using a half correction for the stable period).

This is relatively convincing, although any remaining doubt about whether the portwine stain had really changed could be resolved (without randomisation) by taking a photograph every three months over the 10 years and asking blinded examiners to select the post-treatment photograph with the best appearance. Similar examples include Paré’s assessment, nearly four centuries ago, of the effects of a treatment for burns, and Williams and colleagues’ treatment of three yellow nails with topical vitamin E and three control nails with vehicle only.

Such proof becomes more difficult when the condition is fluctuating or intermittent—for example, with inhaled corticosteroids for asthma or antidepressants to prevent migraine. Here, individual cases and experience are liable to be misleading as there is as much noise as signal. In these circumstances, we usually need randomisation and other measures to reduce biases in order to distinguish treatment effects from the effects of biases, unless the effect is very large, as in laparoscopic Nissen’s fundoplication (our third example). Here the relative rate of abnormal manometry results before and after the fundoplication was 95%/5%=20 (exact numbers give a relative rate of 22 with 95% confidence interval 9.8 to 49). Long term follow-up several years after surgery shows a lasting reduction in the percentage of patients with reflux symptoms from 100% to around 5%, and a fivefold reduction in use of antacids. Given the size and rapidity of the change in these subjective and objective measures, fundoplication obviously works. Whether it works better than drugs or alternative operations is a different question, and one for which randomised trials are needed.
Assessment of three treatments by Bradford Hill guidelines

<table>
<thead>
<tr>
<th>Criteria*</th>
<th>Mother’s kiss for nasal object</th>
<th>Laser for portwine lesion</th>
<th>Fundoplication for heartburn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporal relation (treatment precedes effect)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Strength of relation (eg correlation or relative risk)</td>
<td>Very strong</td>
<td>Very strong</td>
<td>Very strong</td>
</tr>
<tr>
<td>Plausibility (based on current understanding of disease mechanism)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Consistency (across settings and methods)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Coherence (with knowledge of related treatments)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Dose-response relation</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Specificity (treatment causes the effect and little else)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*We have omitted experiment because this is the topic of our discussion.

How large an estimate of a treatment effect is large enough?

How much difference between the treatment outcome (signal) and the natural outcome (noise) is enough? We know that confounding is common and often not obvious; indeed, this was the basis for inventing randomised trials. There is no unambiguous answer to this question: it will always remain a matter of judgment. However, it may be worth trying to develop a rule of thumb, such as that by which we conventionally accept $P=0.05$ as significant.

We suggest that a sufficiently extreme difference between the outcome ranges for treated and untreated patients might be defined by two rules: (a) that the conventionally calculated probability of the two groups of observations coming from the same population should be less than 0.01 and (b) that the estimate of the treatment effect (rate ratio) should be large. In our examples it was at least 20. Simulations have suggested that implausibly large associations, both between treatment and confounding factor and between confounding factor and outcome, are generally required to explain risks beyond relative rates of 5-10. One empirical study that compared randomly selected control groups in multicentre trials also found that, while modest confounding is very likely, such extremes are unlikely. We therefore suggest that rate ratios beyond 10 are highly likely to reflect real treatment effects, even if confounding factors associated with the treatment may have contributed to the size of the observed associations. However, further empirical work in other datasets is clearly desirable.

Possible additional evidence criteria

We have focused on the signal to noise ratio as a measure of the strength of the treatment effect. However, other factors are relevant in making inferences about treatment effects. Austin Bradford Hill proposed a list of factors strengthening confidence in inferences. The table shows how the causation guidelines he proposed might be applied to our three examples. The elements that are common to all three examples are the temporal relation, the strength of the relation (the effect size), and the plausibility, whereas several other criteria are not fulfilled.

Discussion and conclusions

Confident inferences about the effects of treatment are justified in several situations in which treatment effects are unlikely to be confused with the effects of biases. These include, in particular, mechanical interventions such as surgical procedures, where there is a rapid response on a stable background. A probabilistic approach based on the signal to noise ratio may help to define such situations. The strength of relation has already been incorporated in the process of grading evidence suggested by the GRADE collaboration.

The recent examples of hormone replacement therapy and β carotene show how evidence from sources other than randomised trials can lead us badly astray. In both these cases, however, the signal to noise ratio was modest, with relative risks of around 2 (or 0.5, depending on which way the comparison is framed). Relative risks of this order would not meet our requirements for judging a treatment effect to be dramatic.

Although parallel group randomised trials will remain the principal means of obtaining reliable evidence about the average effects of treatments when effects are moderate, our three examples show some circumstances in which treatment effects can be inferred from well designed case series and non-randomised cohort studies. Further research is required to obtain better estimates of the plausible limits of bias in different types of non-randomised study designs.

We thank Abdelhamid Atta, Benjamin Djulbegovic, Hywel Williams, Jan Vandenbroucke, Ulf Dekkers, Dave Sackett, Jonathan Meakins, Ruth Gilbert, Amanda Buris, Ken Fleming, and the members of the Evidence-Based Health Care email list for help with examples and comments on earlier drafts of this paper.

Contributors and sources: All authors have been involved in both clinical trials and clinical practice and the links between these. PG and IC conceived the study, all authors contributed to compiling the examples used for analysis, and development of the concepts and writing of the paper. PG is guarantor.

Competing interests: None declared.

12 Williams HC, Buffham R, du Vivier A. Successful use of topical vitamin E solution in the treatment of nail changes in yellow nail syndrome. Full references 1-20 are on bmj.com
Effect of providing information about normal test results on patients’ reassurance: randomised controlled trial

Keith J Petrie, professor,1 Jan Tobias Müller, diplom psychologist,3 Frederike Schirmbeck, diplom psychologist,3 Liesje Donkin, student,1 Elizabeth Broadbent, lecturer,1 Christopher J Ellis, cardiologist,2 Greg Gamble, statistician,2 Winfried Rief, professor3

ABSTRACT

Objective To investigate whether providing information about normal findings before a diagnostic test improves patients’ reassurance and reduces anxiety about symptoms.

Setting Outpatient cardiology clinic.

Participants 92 patients with chest pain referred for a diagnostic exercise stress test.

Intervention Before undergoing testing patients were randomised to receive standard information (n=28; control group), a pamphlet explaining the function of the test and the meaning of normal test results (n=30; pamphlet group), or the pamphlet and a brief discussion about the meaning of normal test results (n=34; discussion group).

Main outcome measures The primary outcome was patients’ reported reassurance on a 5 item scale immediately after the test and at one month. Secondary outcomes were the proportion of patients still with chest pain and still taking cardiac drugs at one month.

Results The mean levels of reassurance after testing and feedback from the doctor were significantly higher in the discussion group (42.0, 95% confidence interval 39.7 to 44.2) than in the pamphlet (39.2, 36.1 to 42.3) and control groups (35.8, 31.6 to 39.9). This difference was maintained at one month. The proportion of patients still reporting chest pain at one month decreased significantly in the discussion group (to 17%) and pamphlet group (to 28%) but not in the control group (to 36%). A trend was for fewer patients in the discussion group to be taking cardiac drugs at one month.

Conclusion Providing patients with information about normal test results before testing can improve rates of reassurance and reduce the likelihood of future reports of chest pain.

Trial registration Current Controlled Trials ISRCTN87589121.

INTRODUCTION

Reassurance is one of the most common interventions in medical practice. Yet many patients with symptoms remain anxious about their condition even after investigations and reassurance from their doctor.12 Such patients often continue to be disabled by their condition, use drugs inappropriately, and seek medical help from other health professionals for their symptoms.34

Doctors typically give reassurance after investigations. Although this may seem logical, evidence suggests that by the time patients undergo tests many have already developed negative ideas and beliefs about their symptoms, and thus reassurance is much less effective.5 This may especially be the case when there are delays in completing investigations. Patients’ established negative beliefs about their symptoms may limit their ability to assimilate reassuring messages that are by then inconsistent with their view of the seriousness of their condition.6 Furthermore, increasing the amount of reassurance after investigations does not always seem to reduce concerns about symptoms.7

The effects that patients’ pre-existing ideas have on reassurance suggest a possible pathway to improve reassurance. Providing an explanation about the meaning of normal test results before testing may weaken patients’ preconceived ideas about their illness and provide a context to help patients make sense of the test result. Patients will be better prepared to receive reassurance from their doctor and the effects will be strengthened.

We investigated whether giving patients information about a diagnostic test and discussing the meaning of normal results before the test would improve rates of reassurance.

METHODS

Eligible participants were those with chest pain referred for a diagnostic exercise stress test at Auckland City Hospital. The study took place between June and October 2004. We excluded patients aged less than 18 years and those who had a previous diagnosis of cardiac disease, had no symptoms of chest pain, or were undergoing the test as part of a presurgical examination. Participants were randomised to one of three intervention groups according to a computer generated random number sequence. Allocation was concealed in sequentially numbered sealed opaque envelopes.
**Intervention groups**

**Control group**
Patients in the control group received a sheet of information on the exercise stress test from the cardiology clinic with their clinic appointment. This included advice on what to wear, the procedure, and the risks of complications.

**Pamphlet group**
The pamphlet group received a 450 word pamphlet to read before their stress exercise test (additional information is provided by the authors at www.health.auckland.ac.nz/psych-med/staff/keiths%20papers/bmj%20appendix.html). The pamphlet explained the function of the test, the meaning of normal results, and other possible reasons for chest pain that were less serious. The pamphlet was divided into seven sections, with each section headed by the following questions: What is an exercise stress test? How does the exercise stress test work? What happens during testing? What if it is too hard for me? What could the results mean? Could there be other causes for my chest pain? What if my chest pain continues but my test is normal?

**Discussion group**
Patients in the discussion group received the pamphlet and were later engaged in discussion with the research health psychologist, who asked if they had any questions about what they had read. The psychologist briefly reiterated the main points of the pamphlet—that a lot of people with chest pain worry that there might be something wrong with their heart; that if the result of the test is normal the patient’s risk for coronary artery disease is as low as for anyone in the general population; and that just because the pain may not be related to the heart does not mean that it is not real pain and that it is important to keep in mind that many other causes of chest pain are less serious.

Patients completed the test according to the standard Bruce exercise stress testing protocol.8 When results were negative, a cardiology registrar provided patients with their standard reassurance that the result was normal and did not show cardiac disease and that a report would be sent to their general practitioner.

**Baseline assessment**
Patients meeting the eligibility criteria were approached in the waiting room. After providing informed consent they completed a questionnaire on personal data, pain ratings, concerns about symptoms, and self-rated health. They were asked to rate how worried they were about their health (from 0 “not at all” to 10 “extremely”) and the extent to which they believed there was something seriously wrong with their heart (from 0 “not at all” to 10 “strongly believe”). The psychologist then opened the envelope with the randomisation code.

**Post-testing questionnaire**
Immediately after the test the patients completed a brief questionnaire comprising the two items on concerns about their health and heart and three further items. They were asked to rate on 10 point scales the extent to which they were reassured by the test, the extent to which they believed they needed further tests to determine the cause of their illness, and how accurate they thought the test for identifying heart problems. After reversing three of the negatively worded items we summed the scores for these five items to create a scale for reassurance, with higher scores indicating higher levels of reassurance. These items for reassurance have been used previously,5 and the scale showed acceptable internal consistency (Cronbach’s α=0.80).

**One month follow-up**
At one month a researcher blind to the allocation group telephoned the patients and completed the reassurance scale. Patients were also asked if they still had chest pain and if they were still taking cardiac drugs.

**Statistical analysis**
We defined participants as reassured when their reassurance level was above the median for the total sample. Our study is thus conservatively powered to detect a medium (Cohen W=0.38) effect size using PASS.9 This effect size is achieved with a sample size of 66 (80% power, 5% significance level) split between three groups. We therefore recruited 90 participants to compensate for losses to follow-up.

We used SAS statistical software v 9.1 for the analyses. We brought post-test data forward as a proxy for the assessment at one month of the five participants lost to follow-up. To examine differences between the groups on the reassurance scale we used a repeated measures mixed model analysis. We used Tukey post-hoc tests to determine differences between individual groups and across time. To determine potential differences in the proportion of patients reassured (above median at post-testing and follow-up) between the groups and over time we used a categorical modelling procedure (SAS Proc Catmod). McNemar’s test was used to assess whether there were within group differences in reported chest pain. All tests were two tailed and we considered P<0.05 as significant.

**RESULTS**

Of 97 eligible adults with chest pain referred for a diagnostic exercise stress test, five declined to participate (fig 1). Overall, 28 were randomised to receive standard information on the test, 30 to receive an information pamphlet and explanation of the meaning of normal test results, and 34 to receive the pamphlet and a brief discussion about the meaning of normal test results. Fifteen had a positive test result and were excluded. All patients completed the brief post-test assessment. Five patients could not be traced at one month.

Table 1 lists the baseline personal characteristics and clinical details of the experimental groups, including waiting times for the investigation, experience of a previous exercise stress test, and pain. The groups were...
The repeated measures analysis showed a significant difference between the groups on the reassurance scale after the test and at the one month follow-up (table 2; P=0.002) and no interaction with time (P=0.25). A retrospective analysis showed a significantly higher level of reassurance in the discussion group than in the control group.

Significant differences were found between the groups in reassurance after testing and at one month follow-up ($\chi^2=7$, df=2, P=0.03). In the retrospective analysis the discussion group had a higher proportion of reassured patients (65%) after testing than the control (50%) and pamphlet (44%) groups (P=0.03 and P=0.02). At one month this difference was maintained ($\chi^2=1.92$, df=2, P=0.38), with 69% of patients still reassured in the discussion group and 35% in the control group. No significant difference was found between the control and pamphlet groups (P=0.99). More participants in the control and pamphlet groups had lower levels of reassurance at both time points than those in the discussion group (fig 2).

All patients needed to have symptoms of chest pain to be included in the trial. At one month the numbers of patients who mentioned chest pain had reduced significantly to 4 (17%) in the discussion group (P<0.001) and to 7 (28%) in the pamphlet group (P=0.005) but the reduction in the control group to 9 (36%) was not significant (P=0.09). Consistent with these findings was a trend for fewer patients in the discussion group to be taking cardiac drugs: 6 (25%) patients in the control group, 2 (8%) in the pamphlet group, and 1 (4.3%) in the discussion group ($\chi^2=5.3$, df=2, P=0.07).

### Table 1: Personal and clinical characteristics of groups at baseline. Values are numbers (percentages) unless stated otherwise

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control group (n=28)</th>
<th>Pamphlet group (n=30)</th>
<th>Discussion group (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) age (years)</td>
<td>52.2 (13.2)</td>
<td>56.9 (13.6)</td>
<td>52.2 (13.3)</td>
</tr>
<tr>
<td>Men</td>
<td>19</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Women</td>
<td>9</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Ethnicity:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European</td>
<td>18</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>16</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Post</td>
<td>12</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Employment:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td>14</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Previous stress test:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Mean (SD) wait for investigation (weeks)</td>
<td>8.1 (10.0)</td>
<td>6.7 (6.7)</td>
<td>8.4 (10.4)</td>
</tr>
<tr>
<td>Mean (SD) pain severity (1-10)*</td>
<td>3.2 (2.2)</td>
<td>3.4 (2.1)</td>
<td>3.2 (2.4)</td>
</tr>
<tr>
<td>Mean (SD) pain limitation (1-10)†</td>
<td>2.2 (2.4)</td>
<td>2.6 (2.2)</td>
<td>2.1 (2.0)</td>
</tr>
<tr>
<td>Mean (SD) score for ‘How worried are you about your health?’ (1-10)‡</td>
<td>4.4 (2.9)</td>
<td>6.2 (2.7)</td>
<td>5.4 (2.5)</td>
</tr>
<tr>
<td>Mean (SD) score for ‘Do you believe something is seriously wrong with your heart?’ (1-10)§</td>
<td>7.4 (2.5)</td>
<td>8.6 (1.5)</td>
<td>7.3 (2.2)</td>
</tr>
</tbody>
</table>

*1=no pain; 10=severe pain.
†1=not at all; 10=extremely limited.
‡1=not at all; 10=extremely.
§1=not at all; 10=strongly believe.

### Table 2: Reassurance scores after exercise stress test and at one month follow-up in groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (95% CI) post-test scores</th>
<th>Mean (95% CI) follow-up scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>35.8 (31.6 to 39.9)</td>
<td>34.4 (30.5 to 38.4)</td>
</tr>
<tr>
<td>Pamphlet</td>
<td>39.2 (36.1 to 42.3)</td>
<td>38.4 (35.4 to 41.4)</td>
</tr>
<tr>
<td>Discussion</td>
<td>42.0 (39.7 to 44.2)</td>
<td>43.4 (41.0 to 45.8)</td>
</tr>
</tbody>
</table>

Fig 1 | Participant flow through study

Fig 2 | Dot plot for item asking patients how reassured they were by the exercise stress test after testing and at one month follow-up in experimental groups, including means (95% confidence intervals)
Written information and a discussion about normal results before testing improved rates of patients’ reassurance

WHAT IS ALREADY KNOWN ON THIS TOPIC
Reassurance from doctors is a common medical intervention. Even after the completion of investigations and reassurance from doctors, many patients remain anxious about their symptoms.

WHAT THIS STUDY ADDS
Written information and a discussion about normal results before testing improved rates of patients’ reassurance.

DISCUSSION
Providing patients with chest pain who have been referred for exercise stress testing with information about the test and an explanation of normal test results before testing improved rates of reassurance and reduced the likelihood of future reports of chest pain. One month after the test, patients who had been randomised to an information pamphlet on the test and a brief discussion about normal results had fewer reports of chest pain, were more reassured by the test, and tended not to be taking cardiac drugs than patients who had been randomised to standard advice (control group) or to a pamphlet explaining the test and normal results. At one month most patients in the control group were not reassured by the investigation. The results of the study suggest that a simple low cost intervention that explains the meaning of normal results before investigations is likely to reduce patients’ concerns about symptoms and unnecessary future medical care and investigations.

Previous research shows that a large number of patients without disease remain worried or uncertain after medical investigations.10-12 We also found that half of the patients in the control group were not reassured by the standard advice they received before testing, and initial reassurance in this group tended to decline over time. An earlier study of patients with non-cardiac chest pain noted that many are unprepared for the possibility of negative findings and lack a context in which to interpret such results.3 Providing prior information about the test and the meaning of a normal test result seemed to lead to better assimilation of reassuring messages. Furthermore, in patients prepared for a normal test result, reports of subsequent chest pain were reduced.

The strength of this study was that we were able to collect information on patients’ concerns about their symptoms before testing, immediately after testing, and at one month. Also, only a few patients were lost at the follow-up assessment. It would be useful if future research collected information over an extended follow-up period, which would enable the assessment of any differences in future medical investigations in the study groups and an estimate of the economic benefits of the intervention. We used a health psychologist to engage patients in a discussion about the test and it remains to be established whether similar results can be obtained with a clinic nurse or registrar.

This relatively small study may best be considered as a proof of principle study, the results of which need replication in a larger sample. The implication of the study for clinicians is that an increase in patients’ reassurance after clinical testing can be expected if more time is spent explaining the meaning of normal test results before the test. Improvements in reassurance are also likely to impact on unnecessary future investigations and patients’ anxieties about their symptoms.

Contributors: KJP conceived and designed the study, drafted the manuscript, and is guarantor. JTM, FS, and LD helped develop the study materials and run the trial. GG, EB, CE, and WR helped with data interpretation. CE, WR, EB, and GG helped draft the paper. All authors contributed to and approved the final version.

Funding: University of Auckland.

Competing interests: None declared.

Ethical approval: This study was approved by the New Zealand Ministry of Health Ethics Committee (AKY/04/05/021).


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Improved effectiveness of partner notification for patients with sexually transmitted infections: systematic review

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ABSTRACT

Objective To examine the effectiveness of methods to improve partner notification by patient referral (index patient has responsibility for informing sex partners of their exposure to a sexually transmitted infection).

Design Systematic review of randomised trials of any intervention to supplement simple patient referral.

Data sources Seven electronic databases searched (January 1990 to December 2005) without language restriction, and reference lists of retrieved articles.

Review methods Selection of trials, data extraction, and quality assessment were done by two independent reviewers. The primary outcome was a reduction of incidence or prevalence of sexually transmitted infections in index patients. If this was not reported data were extracted according to a hierarchy of secondary outcomes: number of partners treated; number of partners tested or testing positive; and number of partners notified, located, or elicited. Random effects meta-analysis was carried out when appropriate.

Results 14 trials were included with 12,389 women and men diagnosed as having gonorrhoea, chlamydia, non-gonococcal urethritis, trichomoniasis, or a sexually transmitted infection syndrome. All studies had methodological weaknesses that could have biased their results. Three strategies were used. Six trials examined patient delivered partner therapy. Meta-analysis of five of these showed a reduced risk of persistent or recurrent infection in patients with chlamydia or gonorrhoea (summary risk ratio 0.73, 95% confidence interval 0.57 to 0.93). Supplementing patient referral with information for partners was as effective as patient delivered partner therapy. Neither strategy was effective in women with trichomoniasis. Two trials found that providing index patients with chlamydia with sampling kits for their partners increased the number of partners who got treated.

Conclusions Involving index patients in shared responsibility for the management of sexual partners improves outcomes. Health professionals should consider the following strategies for the management of individual patients: patient delivered partner therapy, home sampling for partners, and providing additional information for partners.

INTRODUCTION

Partner notification is an important part of managing sexually transmitted infections.1 This includes identifying sex partners, informing them of their exposure, ensuring evaluation or treatment, and providing advice on preventing further infections.2 The stigma attached to sexually transmitted infections makes partner notification difficult.3 More partners are likely to be treated if a health professional contacts them on behalf of the patient (provider referral) than if patients do this themselves (patient referral).4 In practice, however, both patients5 and doctors6 prefer patient referral, which is cheaper6-8 and easier to do in primary care, where increasing numbers of sexually transmitted infections are being diagnosed.9 Current methods of patient referral only reach 40-60% of named sexual partners,10 so new strategies are needed.

The National Institute for Health and Clinical Excellence will provide guidance about interventions to reduce the transmission of sexually transmitted infections, including partner notification, in February 2007 (www.nice.org.uk). Because none of the published systematic reviews of partner notification included new methods to improve patient referral11 12 we systematically reviewed the literature to examine their effectiveness.

METHODS

We searched seven electronic databases without language restrictions from January 1990 to December 2005 (Medline, Embase, Cinahl, Cochrane Library, PsycINFO, Sigle, DARE) and the reference lists of relevant reports. Subject headings and free text words covering specific sexually transmitted infections were combined with terms for partner notification (detailed search strategy available from the authors). We also searched two electronic research registers (international standard randomised controlled trial number and clinicaltrial.gov) using the search term “partner notification”.

We considered all sexually transmitted infections. We included trials that compared simple patient referral with patient referral supplemented by
methods aimed at improving its effectiveness. We defined simple patient referral as an intervention in which the index patient had responsibility for informing their sexual partners about the infection and advising them to seek treatment. This could be done with or without contact cards, which are given by index patients to partners and contain the diagnosis and address of the clinic.

Two authors independently screened titles and abstracts. If eligibility could not be assessed we obtained a full text version. Disagreements were resolved by discussion. Duplicate reports were identified and data extracted from the most recent publication.

Data on setting, participants, interventions, outcomes, and quality were independently extracted by two authors using a piloted, standardised form. We used published checklists to assess methodological quality. Disagreements were resolved by discussion.

Outcome measures
We defined the primary outcome as a reduction of incidence or prevalence of sexually transmitted infections in index patients. This is the most objectively measured outcome and is directly related to the public health aim of controlling the spread of sexually transmitted infections. If the primary outcome was not reported we extracted data according to a hierarchy of secondary, intermediate outcomes: number of partners treated; number of partners tested or testing positive; and number of partners notified, located, or elicited.

Statistical analysis
For outcomes reported as proportions we calculated exact 95% confidence intervals or two sided P values. For outcomes reported as mean numbers per index case we did not carry out additional calculations because we could not account for the clustering of the data. When more than two trials examined the same intervention we combined results using random effects meta-analysis. Statistical evidence of heterogeneity was assessed using Cochran’s Q and the I² statistic, which describes the percentage of total variation across trials that is attributable to heterogeneity rather than chance. I² values of 25%, 50%, and 75% correspond to low, moderate, and high heterogeneity between trials. In meta-analyses with at least five trials we examined funnel plots and did a statistical test for small study effects. We used Stata 9.2 for all analyses.

RESULTS
Overall, 2493 unique references were identified and 290 full text manuscripts retrieved, including two reports from unpublished studies (fig 1). Fourteen trials examining 16 interventions in 12,389 people were included. Included trials studied patients with gonorrhoea, chlamydia, trichomoniasis, non-specific urethritis, or syndromically diagnosed infections (table; a more detailed table of the included studies is available from the authors on www.ispm.ch/index.php?id=1193). We found no relevant trials on syphilis, HIV, or other infections. We identified three strategies for improving the yield of patient referral. Six trials evaluated interventions in which the index case was given drugs or a prescription for their partners (patient delivered partner therapy). Two of these also compared patient delivered partner therapy with additional information for index patients to give to partners. Two trials evaluated providing index patients diagnosed as having chlamydia with sampling kits for partners. Eight trials evaluated providing additional written, visual, or verbal information.

Methodological quality
All included studies had methodological weaknesses that could have biased their results (see table of quality assessment on www.ispm.ch/index.php?id=1193). Only four trial reports described an adequate method of generating a random allocation sequence, and concealment was adequate in only one of these. One other trial concealed allocation by using sealed, opaque, sequentially numbered envelopes. Two trials used systematic allocation sequences (date of birth and month of presentation) that could not be concealed. One trial was described as an observational cohort, in which women were randomly assigned to different healthcare providers. No description was provided of sequence generation or allocation concealment. No other trial described the concealment of allocation.

Six trials measured our pre-defined primary outcome. Five of these also measured at least one secondary outcome. Of trials measuring only secondary outcomes, three assessed the numbers of partners treated, reported a full text manuscript, and address of the clinic.

Fig 1 Flowchart of trial selection

Table 1 | Flowchart of trial selection

<table>
<thead>
<tr>
<th>References identified (n=2493)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title and abstract screening</td>
</tr>
<tr>
<td>Excluded (n=2203):</td>
</tr>
<tr>
<td>Duplicates (n=654)</td>
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<td>Topic not relevant (n=1429)</td>
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<tr>
<td>Study design not relevant (n=76)</td>
</tr>
<tr>
<td>Other (n=44)</td>
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<tr>
<td>Full manuscripts retrieved (n=290)</td>
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<td>Duplicates (n=4)</td>
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<tr>
<td>Topic not relevant (n=7)</td>
</tr>
<tr>
<td>Study design not relevant (n=264)</td>
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<tr>
<td>Other (n=1)</td>
</tr>
<tr>
<td>Trials included in review (n=16)</td>
</tr>
</tbody>
</table>

insert table here
Characteristics of included studies ordered according to publication date

<table>
<thead>
<tr>
<th>Study reference</th>
<th>Participants</th>
<th>Interventions</th>
<th>No of patients</th>
<th>Primary outcome and results</th>
</tr>
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<tbody>
<tr>
<td>Kissinger et al 2006 w9</td>
<td>Women with <em>Trichomonas vaginalis</em></td>
<td>Intervention 1, patient delivered partner therapy; intervention 2, patient referral plus information for partner; control, patient referral</td>
<td>463</td>
<td>Persistent or recurrent infections: intervention 1 9.4%; intervention 2 9.0%; control 6.3%; P=0.64</td>
</tr>
<tr>
<td>Golden et al 2005 w12</td>
<td>Men and women with <em>Neisseria gonorrhoeae</em> or <em>Chlamydia trachomatis</em></td>
<td>Intervention: patient delivered partner therapy; control, patient referral</td>
<td>2751</td>
<td>Persistent or recurrent infections: intervention 10%; control 13%; P=0.04</td>
</tr>
<tr>
<td>Kissinger et al 2005 w12</td>
<td>Men with <em>N gonorrhoeae</em> or <em>C trachomatis</em></td>
<td>Intervention 1, patient delivered partner therapy; intervention 2, patient referral plus information for partner; control, patient referral</td>
<td>977</td>
<td>Persistent or recurrent infections: intervention 1 6%; intervention 2 5%; control 12%; P=0.01</td>
</tr>
<tr>
<td>Schillinger et al 2003 w8</td>
<td>Women with <em>C trachomatis</em></td>
<td>Intervention: patient delivered partner therapy; control, patient referral</td>
<td>1889</td>
<td>Persistent or recurrent infections: intervention 12%; control 15%; P=0.11</td>
</tr>
<tr>
<td>Ostergaard et al 2003 w8</td>
<td>Men and women with <em>C trachomatis</em></td>
<td>Intervention: patient referral plus home sampling; control: patient referral plus sampling kit to take to healthcare provider</td>
<td>1826 (562 enrolled)</td>
<td>Partners tested per index patient: men—intervention 0.16; control 0.04; P=0.0001; women—intervention 0.31; control 0.14; P=0.0001</td>
</tr>
<tr>
<td>Moyo et al 2002 w9</td>
<td>Men and women with syndromic bacterial sexually transmitted infections</td>
<td>Intervention: patient referral plus interactive questions and answers* plus voucher for health care; control: patient referral (clear, 30 minute interview)</td>
<td>272</td>
<td>Proportion with ≥1 partner notified: intervention 92%; control 67%; P=0.001</td>
</tr>
<tr>
<td>Nuwaha et al 2001 w5</td>
<td>Men and women with syndromic sexually transmitted infections</td>
<td>Intervention: patient delivered partner therapy; control: patient referral</td>
<td>383</td>
<td>Partners treated or referred per partner elicited: intervention 74%; control 34%; risk ratio 2.44 (95% confidence interval 1.95 to 3.07)</td>
</tr>
<tr>
<td>Kissinger et al 1998 w6</td>
<td>Women with <em>C trachomatis</em></td>
<td>Intervention: patient delivered partner therapy; control, patient referral</td>
<td>256</td>
<td>Persistent or recurrent infections: intervention 12%; control 22%; P=0.05</td>
</tr>
<tr>
<td>Andersen et al 1998 w7</td>
<td>Women with <em>C trachomatis</em></td>
<td>Intervention: patient referral plus home sampling; control: patient referral plus sampling kit to take to healthcare provider</td>
<td>96</td>
<td>Patients tested positive per index patient: intervention 0.27; control 0.14; difference 0.13 (95% confidence interval −0.03 to 0.29)</td>
</tr>
<tr>
<td>Faxelid et al 1996 w10</td>
<td>Men and women with sexually transmitted disease</td>
<td>Intervention: patient referral plus interactive questions and answers* plus education†; control: usual care (no other details)</td>
<td>396</td>
<td>Proportion with ≥1 partner notified: men: intervention 100%; control 93%; P=0.001; women: intervention 72%; control 56%; P=0.14</td>
</tr>
<tr>
<td>Katz et al 1988 w11</td>
<td>Men with non-gonococcal urethritis</td>
<td>Intervention: patient referral plus interactive questions and answers* plus education†; control: patient referral</td>
<td>457</td>
<td>Partners tested per index patient: intervention 0.22; control 0.18; difference 0.04 (95% confidence interval −0.04 to 0.12)</td>
</tr>
<tr>
<td>Solomon and Dejong 1986 w12</td>
<td>Men with <em>N gonorrhoeae</em></td>
<td>Intervention: patient referral plus education†; control: patient referral</td>
<td>902</td>
<td>Partners tested: “no significant difference”</td>
</tr>
<tr>
<td>Cleveland 2001 w13</td>
<td>Men and women with <em>N gonorrhoeae</em></td>
<td>Intervention: patient referral plus interactive questions and answers* plus education†; control: patient referral</td>
<td>1266</td>
<td>Persistent or recurrent infections: intervention 6%; control 8%; P=0.76</td>
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<tr>
<td>Ellison et al 2001 w14</td>
<td>Sex unclear; syndromically transmitted infections</td>
<td>Intervention 1: patient referral plus education†; intervention 2: patient referral plus interactive questions* and answers plus education†; control: patient referral</td>
<td>1719</td>
<td>Partners tested per index patient: intervention 1 0.20; intervention 2 0.22; intervention 3 0.25; control 0.18</td>
</tr>
</tbody>
</table>

Results are presented according to primary analysis presented in report (P values or confidence intervals calculated if not reported and enough details reported). Differences do not necessarily add up owing to rounding. For additional details see table provided by authors on www.ispm.ch/index.php?id=1193.

*Interactive questions and answers include all interventions described as counselling or discussions with patients.

w14 three measured numbers of partners tested, w7w8 and two measured numbers of partners notified.w9w10 Assessment of outcomes was potentially biased in all but one study that used blinded ascertainment.w14 In addition, patients in the intervention but not the control group were refunded their transport fare, and outcomes in the two groups were assessed differently in one trial.w5 In another two trials examining patient delivered partner therapy, the wording of the question assessing the outcome would have underestimated the proportion of patients treated in the control groups.w1w2 In six trials,w1w5w6 in addition to the intervention itself participants in the experimental group received materials or benefits that could have contributed to the observed effect.

**Patient delivered partner therapy**

Over 6000 patients (4912 women, 1807 men) were enrolled in six trials of patient delivered partner therapy.w1w6 In one trial from Uganda,w5 and one from the United States,w4 index patients in the intervention group received packets containing only the drugs. In the other trials packets also contained information on the drugs and details of how to contact health professionals.w1w4 One trial also included information about the infection,w4 and one included condoms with the other materials.w6 The control groups received simple patient referral without contact cards in three trials,w1w3w6 and with contact cards in three trials.w4w6

The rate of persistent or recurrent infections in patients managed with patient delivered partner therapy was lower than in controls among index cases with chlamydia or gonorrhoea but not with trichomomas. In five trials providing sufficient data the summary risk ratio compared with simple patient referral was 0.73 (95% confidence interval 0.57 to 0.93), with some evidence of statistical heterogeneity (I² 37%, P=0.18; fig 2).w1w4w6 If 10% of patients managed
with simple patient referral had persistent or recurrent infections, the absolute risk reduction would be 3.7% (0.7% to 4.3%) and the number needed to treat would be 27 (23 to 143). No statistical evidence was found for small study effects (P = 0.91). Four trials provided enough details for meta-analysis of the proportion of partners treated per partner elicited. All four trials favoured patient delivered partner therapy, and the meta-analysis showed a relevant increase in the number of partners treated (risk ratio 1.44, 95% confidence interval 1.12 to 1.86), but statistical heterogeneity was high (I^2 = 94%, P < 0.0001; fig 2). The relatively large size of trials results in small standard errors, which can inflate the I^2 statistic.

Two trials compared patient delivered therapy with patient referral supplemented by booklets with tear-out cards and treatment guidelines for index patients to give to partners. The proportions of index patients with persistent or recurrent infection with chlamydia, gonorrhoea, or trichomonas were similar in the two groups in both trials but data were insufficient for meta-analysis (see table of included studies on www.ispm.ch/index.php?id=1193). The proportion of partners treated was higher in patients receiving patient delivered partner therapy (summary risk ratio 1.25, 95% confidence interval 1.15 to 1.37; I^2 0%, P = 0.44; fig 3).

### Persistent or recurrent infections

<table>
<thead>
<tr>
<th>Study</th>
<th>No of patients</th>
<th>Weight (%)</th>
<th>Risk ratio (95% CI)</th>
<th>Risk ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kissinger et al 1998</td>
<td>256</td>
<td>7</td>
<td>0.52 (0.22 to 1.26)</td>
<td>1.08 (0.95 to 1.24)</td>
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<tr>
<td>Schillinger et al 2003</td>
<td>1889</td>
<td>34</td>
<td>0.80 (0.61 to 1.05)</td>
<td>0.76 (0.59 to 0.98)</td>
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<tr>
<td>Golden et al 2005</td>
<td>2751</td>
<td>36</td>
<td>0.47 (0.28 to 0.80)</td>
<td>1.48 (0.62 to 3.49)</td>
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<tr>
<td>Kissinger et al 2005</td>
<td>629</td>
<td>16</td>
<td>1.48 (0.62 to 3.49)</td>
<td>0.73 (0.57 to 0.93)</td>
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<tr>
<td>Kissinger et al 2006</td>
<td>309</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall (I^2 = 37%, P = 0.18)</td>
<td></td>
<td></td>
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</table>

### Partners treated per elicited partner

<table>
<thead>
<tr>
<th>Study</th>
<th>No of patients</th>
<th>Weight (%)</th>
<th>Risk ratio (95% CI)</th>
<th>Risk ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuwaha et al 2001</td>
<td>383</td>
<td>23</td>
<td>2.20 (1.81 to 2.67)</td>
<td>1.19 (1.12 to 1.27)</td>
</tr>
<tr>
<td>Golden et al 2005</td>
<td>2751</td>
<td>27</td>
<td>1.59 (1.40 to 1.81)</td>
<td>1.08 (0.95 to 1.24)</td>
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<tr>
<td>Kissinger et al 2005</td>
<td>629</td>
<td>25</td>
<td></td>
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<tr>
<td>Kissinger et al 2006</td>
<td>309</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall (I^2 = 94%, P = 0.001)</td>
<td></td>
<td></td>
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</tbody>
</table>

Fig 2 | Random effects meta-analyses of primary and secondary outcomes of trials comparing patient delivered partner therapy with simple patient referral. All trials except for Schillinger et al 2003 had unclear or inadequate concealment of allocation.
was lower than in controls (5% vs 12%; P < 0.01; risk ratio 0.37, 95% confidence interval 0.21 to 0.66), and partners were treated more often in the group who received additional information for partners (46% vs 35% of partners; P < 0.01; risk ratio 1.30, 1.13 to 1.49). The other trial examined the same interventions in women with trichomoniasis: 154 received additional information for their partners and 155 received simple patient referral. Rates of persistent or recurrent infection in index patients were similar (9% vs 6%; P=0.64; risk ratio 1.42, 0.59 to 3.41). Fewer index patients in the group receiving the booklet than in the control group reported that their partners had taken the treatment (58% vs 70%; P < 0.01; risk ratio 0.82, 0.69 to 0.98). No meta-analysis was carried out on the results of these two trials.

Interactive question and answer session for index cases
One trial in South Africa found no additional benefit in numbers of partners treated compared with patient referral with contact cards. One trial in Zimbabwe supplemented an interactive question and answer session with a healthcare voucher for partners and found statistical evidence of benefit in the number of index patients with at least one partner notified (92% vs 67%; P < 0.001).w9

Structured verbal education or video
Two trials that evaluated information given from a structured script or asked patients to watch a video found no effect on partners tested or treated compared with patient referral with contact cards. Structured verbal education or video interventions that involve patients with sexually transmitted infections in shared responsibility for the care of their sexual partners. Five trials of patient delivered partner therapy reported effects on persistent or recurrent infections in index patients. Patient delivered partner therapy was superior to patient referral with or without contact cards, but the absolute effects were modest. Patient delivered partner therapy did not, however, reduce persistent or recurrent infections in index patients when compared with simple patient referral supplemented by information for partners. Two trials found that offering home sampling kits to partners resulted in more partners being tested compared with sampling at a doctor’s surgery, but the control intervention was not comparable to that used in other studies. Several trials examined different ways of providing additional information to index patients. Interventions that combine additional written and verbal information might be superior to simple patient referral alone. No trial directly compared simple patient referral with patient referral using contact cards.

Strengths and weaknesses
Our review included studies of both women and men with a range of curable sexually transmitted infections in developed and developing countries. We searched multiple databases and reference lists so it is unlikely that we missed relevant controlled trials. We minimised subjectivity by carrying out study selection, data extraction, and quality assessment in duplicate and used validated, replicable criteria for quality assessment. Our conclusions were, however, limited by the quality of included studies and the information reported quality was poor.

**Fig 3** Random effects meta-analysis of secondary outcome in trials comparing patient delivered partner therapy with patient referral supplemented by information for partners. Both trials had unclear or inadequate concealment of allocation

---

**Partners treated per elicited partner**

<table>
<thead>
<tr>
<th>Study</th>
<th>No of patients</th>
<th>Weight (%)</th>
<th>Risk ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kissingier et al 2005w2</td>
<td>692</td>
<td>71</td>
<td>1.22 (1.10 to 1.36)</td>
</tr>
<tr>
<td>Kissingier et al 2006w1</td>
<td>308</td>
<td>29</td>
<td>1.32 (1.12 to 1.55)</td>
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<tr>
<td>Overall (I²=0%, P=0.44)</td>
<td></td>
<td></td>
<td>1.25 (1.15 to 1.37)</td>
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</tbody>
</table>

Favours patient referral supplemented by additional information for partners

Favours patient delivered partner therapy
provided. Despite the large overall number of participants, differences in the interventions and outcomes limited the use of meta-analysis to summarise results and explore heterogeneity. Also our results apply only to sexually transmitted infections that cause urethritis, cervicitis, and vaginitis because we did not find any relevant trials including patients with syphilis, HIV, or other sexually transmitted infections.

Comparison with previous research
The new strategies identified in our review involved methods that made it easier for the index patient to share responsibility for the care of their sexual partners. Traditionally partner notification has emphasised the duty of confidentiality to the index patient, even if this deters partners from seeking treatment. Observational evidence has suggested that providing more information about the sexually transmitted infection is acceptable to both index patients and partners. We identified seven randomised trials investigating patient delivered partner therapy or home sampling and two trials in resource poor settings that have not been included in previous reviews. A narrative review of US trials of expedited partner therapy, which is the term used in the United States for any method that aims to speed up treatment for sex partners without an intervening medical evaluation or counselling, reached conclusions similar to ours.

Effectiveness of methods to enhance patient referral
Our review shows that the primary outcome in future trials of partner notification should be a reduction in infection rates because surrogate end points might be misleading. Patient delivered partner therapy was superior to simple patient referral for both biological and behavioural outcomes. However, when patient delivered partner therapy was compared with patient referral in which index patients were also given information for their sexual partners and treatment guidelines for the doctor, an increase in the numbers of partners treated did not translate into a reduction in persistent or recurrent infections. It is possible that the benefits of supplemented patient referral follow from more careful ascertainment of sexual contact histories and extra discussion about the infection, rather than the use of contact cards, which are rarely returned. This is supported by the finding that when simple patient referral included contact cards for index cases, most trials providing further written or verbal information did not show an increase in the numbers of sexual partners treated. Patient delivered partner therapy was beneficial in patients with chlamydia, gonorrhoea, and syndromic diagnoses but not in women with trichomonas. The reasons for this are not clear.

Implications for research and practice
The number of doctors who practise patient delivered partner therapy is increasing. According to the Medicines and Healthcare Regulatory Authority similar strategies are legal in the United Kingdom if the partner is assessed by a health professional. This assessment can be done by telephone or by pharmacists supplying the drugs. An intervention to accelerate partner therapy in the United Kingdom is being developed (C Estcourt, personal communication, 2006). Providing patients diagnosed as having chlamydia with self sampling kits for their partners is also being evaluated in a UK based randomised controlled trial (ISRCTN12617257). Patient delivered partner therapy also improved outcomes for syndromically diagnosed infections in Uganda, a resource poor country where elaborate interventions are not feasible. The poor specificity of syndromic management algorithms in women, however, exposes them to the risk of gender based violence. Trials in Africa were the only ones in our review to have reported on the adverse effects of partner notification. Strategies to improve the effectiveness of patient referral for syphilis and HIV should also be evaluated to expand the options available to patients with these infections.

Future randomised trials of partner notification must follow agreed standards of conduct and reporting. More than 10 years have passed since the consolidated standards of reporting trials statement was first published, but even the most recent trials in this review did not report essential methodological details such as methods of randomisation and allocation concealment. When the sequence of randomisation was clearly not concealed imbalances between groups in the numbers of participants suggest that allocation was not truly random and that the benefit of the intervention might have been overestimated. Furthermore, the benefits of patient delivered partner therapy might have been exaggerated by differences in the content of interventions or ascertainment of outcomes. In five trials index patients in the experimental group received additional materials including condoms or reimbursements, which were not given to the control group.

Conclusion
Involving index patients in shared responsibility for the management of sexual partners improves outcomes. Health professionals should consider the following strategies for the management of individual patients: patient delivered partner therapy, home sampling for partners, and providing additional information for partners.

Contributors: ST searched the literature, selected articles, extracted and analysed the data, and drafted the manuscript. AS selected articles, extracted the data, and revised the manuscript. LN selected articles and revised the manuscript. JAC obtained funding, supervised the review, revised the manuscript, and is guarantor for the paper. All authors approved the final version.

Funding: ST, AS, LN, and NL are or were employed by the University of Bern, which received funding from the UK National Institute for Health and Clinical Excellence. Parts of the research referred to in this article were commissioned by NICE to inform the development of its forthcoming guidance on the prevention of sexually transmitted infections. The full report is available on
effective as patient delivered partner therapy

Simple patient referral combined with additional information for partners might be as more effective than simple patient referral

Patient delivered partner therapy, home sampling, and additional information for partners are more effective than simple patient referral

Involving index patients in the care of sexual partners improves the outcomes of partner notification for chlamydia, gonorrhoea, and non-specific urethritis

WHAT THIS STUDY ADDS

Involving index patients in the care of sexual partners improves the outcomes of partner notification for chlamydia, gonorrhoea, and non-specific urethritis

Patient delivered partner therapy, home sampling, and additional information for partners are more effective than simple patient referral

Simple patient referral combined with additional information for partners might be as effective as patient delivered partner therapy
Sinusitis and its management

Kim W Ah-See, Andrew S Evans

Sinusitis is one of the most common diagnoses in primary care. It causes substantial morbidity, often resulting in time off work, and is one of the commonest reasons why a general practitioner will prescribe antibiotics.

Sources and selection criteria
We searched Medline for recent papers (1996-2006) using “sinusitis”, “rhinosinusitis”, “acute”, “chronic”, “diagnosis”, and “management” as keywords. We also searched the Cochrane Database of systematic reviews using the keywords “sinusitis” and “rhinosinusitis”. In addition, we used a personal archive of references relating to our clinical experience and updates written for Clinical Evidence.

Causes of sinusitis
Sinusitis is generally triggered by a viral upper respiratory tract infection, with only 2% of cases being complicated by bacterial sinusitis. About 90% of patients in the United States are estimated to receive an antibiotic from their general practitioner, yet in most cases the condition resolves without antibiotics, even if it is bacterial in origin. Most general practitioners rely on clinical findings to make the diagnosis. Signs and symptoms of acute bacterial sinusitis and those of a prolonged viral upper respiratory tract infection are closely similar, resulting in frequent misclassification of viral cases as bacterial sinusitis. Boxes 1 and 2 list common and rarer causes of rhinosinusitis.

Clinical diagnosis and pathophysiology
The term sinusitis refers to inflammation of the mucosal lining of the paranasal sinuses. However, as sinusitis is invariably accompanied by inflammation of the adjacent nasal mucosa, a more accurate term is rhinosinusitis.

The European Academy of Allergology and Clinical Immunology defines acute rhinosinusitis as, “Inflammation of the nose and the paranasal sinuses characterised by two or more of the following symptoms: blockage/congestion; discharge (anterior or postnasal drip); facial pain/pressure; reduction or loss of smell, lasting less than 12 weeks.” Additional symptoms—such as toothache, pain on stooping, and fever or malaise—help make the clinical diagnosis (box 3). The European Academy also suggests that worsening symptoms after five days or persistent symptoms beyond 10 days (but less than 12 weeks) indicate non-viral rhinosinusitis, whereas viral disease lasts less than 10 days.

SUMMARY POINTS
Rhinosinusitis is a common primary care condition
Most cases of acute rhinosinusitis resolve with symptomatic treatment with analgesics
Chronic rhinosinusitis may, however, require referral to an ear, nose, and throat specialist for possible endoscopic sinus surgery if medical management fails
Patients with acute facial pain or headache but no other nasal symptoms are highly unlikely to have rhinosinusitis
Urgent referral is required if complications of rhinosinusitis are suspected—such as orbital sepsis or intracranial sepsis

Box 1 | Common causes of rhinosinusitis
- Viral infection
- Allergic and non-allergic rhinitis
- Anatomical variations
- Abnormality of the osteomeatal complex
- Septal deviation
- Concha bullosa
- Hypertrophic middle turbinate
- Cigarette smoking
- Diabetes mellitus
- Swimming, diving, high altitude climbing
- Dental infections and procedures

Box 2 | Rarer causes of rhinosinusitis
- Cystic fibrosis
- Neoplasia
- Mechanical ventilation
- Use of nasal tubes, such as nasogastric feeding tubes
- Samter’s triad (aspirin sensitivity, rhinitis, asthma)
- Sarcoidosis
- Wegener’s granulomatosis
- Immune deficiency
- Sinus surgery
- Immotile cilia syndrome
The precipitating factor in acute sinusitis seems to be blockage of the sinus ostium, typically the maxillary sinus ostium situated under the middle turbinate (fig 1). It is this obstruction with mucus retention and subsequent infection that produces the signs and symptoms characteristic of rhinosinusitis. Whereas viral upper respiratory tract infections trigger most cases, the rising prevalence of rhinosinusitis might relate to a similar rise in incidence of allergic rhinitis. A small proportion of cases can arise as a result of dental root infection (odontogenic sinusitis). The bacteriology of acute rhinosinusitis differs from that of chronic rhinosinusitis (box 5).

**Are other investigations required?**
Additional investigations have been used to help with diagnosis. A raised erythrocyte sedimentation rate and C reactive protein have been found to be helpful, and x ray examination of the sinuses, ultrasonography, computed tomography, sinus puncture, and culture of aspirate have also been described. None of these, however, is universally available in primary care, and heterogeneity in the literature makes it difficult to recommend an optimal investigation.

**What is the influence of allergy in rhinosinusitis?**
In 2001 the ARIA (Allergic Rhinitis and its Impact on Asthma) Group published a document establishing the link between the upper and lower airways. Evidence suggests that allergic inflammation affects the entire respiratory tract as a continuum, with a high proportion of asthmatic individuals having comorbid allergic rhinitis. The existence of a relation between rhinitis and asthma is supported by evidence that control of rhinitis improves asthma control; this has led to phrases such as “one airway, one disease.”

The incidence of rhinosinusitis is higher in patients with allergy (particularly those with IgE mediated allergic rhinitis (25% to 50%)) than in the general population, although a causal relation is difficult to show. Studies have shown a higher prevalence of atopy in patients with chronic rhinosinusitis, although this does not necessarily correspond with clinical allergy. Several radiological studies have shown an increase in mucosal abnormalities on computed tomography of sinuses in allergic patients. Other studies, however, suggest that the incidence of infective rhinosinusitis does not rise during the hay fever season in pollen sensitive patients. Patients with allergy and chronic rhinosinusitis respond less well to drug treatment, and results of surgical intervention for chronic rhinosinusitis are poorer in patients with allergy than in patients without.

**How is sinusitis treated medically?**
The vast majority of patients with acute rhinosinusitis will get better spontaneously without treatment; some, however, will develop chronic mucociliary clearance problems and resultant chronic rhinosinusitis. It is not possible to predict those who will progress to chronic disease.

**Acute rhinosinusitis**
The mainstay of treatment for acute rhinosinusitis is symptomatic relief with analgesics; little evidence supports the use of antihistamines, intranasal steroids, nasal douches, or decongestants.

Some evidence supports the use of antibiotics, with a 3-5% difference in cure rate compared with placebo, especially in cases where symptoms are severe, persistent (>5 days), or progressive. Evidence suggests benefit with amoxicillin or co-amoxiclav, as well as with cephalosporins or macrolides. Resolution rates for these drugs are reported to be similar, although cephalosporins and macrolides may have fewer adverse effects. Recent evidence supports the use of a topical steroid spray in acute rhinosinusitis.

**Chronic rhinosinusitis**
Medical treatment options for chronic rhinosinusitis should begin with topical nasal steroids along with aggressive treatment of any underlying cause or comorbid allergy. Oral steroids should be reserved for refractory cases, particularly when underlying allergy is present. If oral steroids are required, caution should be taken in at-risk groups, including...
patients with diabetes or active peptic ulceration. It is often useful to give an intermediate dose of steroid such as fluticasone nasal sprays or betamethasone drops to bridge the gap between oral and topical steroid spray preparations. Once symptoms have resolved, it is essential to maintain improvement with long term (>3 months) intranasal steroid treatment in the form of an aqueous nasal spray.4

Oral antibiotics with anaerobic and Gram negative cover may be required, although the European Academy of Allergology and Clinical Immunology found limited evidence to support their use. They may be considered in patients who have failed to respond to initial intranasal steroid therapy or in those who have severe symptoms with evidence of persistent nasal sepsis. Symptom relief can be achieved in both acute and chronic rhinosinusitis with the use of topical saline douches and sprays.4

Failure to respond to a three month period of initial medical treatment should prompt referral to an ear, nose, and throat specialist. Additionally, prompt referral should be considered in cases where sinister or worrying features exist (box 6).

**What is the role of surgery for rhinosinusitis?**

Surgery for rhinosinusitis should be considered only after maximal drug treatment has failed or complications are suspected. Traditional open sinus procedures for chronic rhinosinusitis have been largely replaced by endoscopic techniques.19 With a better understanding of normal mucociliary clearance pathways and anatomy of the osteomeatal complex (fig 1), endoscopic sinus surgery is now the mainstay of surgical treatment for chronic rhinosinusitis.20

Endoscopic sinus surgery entails restoring sinus ventilation and drainage by careful removal of any soft tissue obstructing the natural drainage ostia in an attempt to restore mucociliary function.20 After surgery, intranasal steroids, saline douching, and nasal toileting are important to help mucosal healing and avoid the formation of intranasal adhesions.

Surgery in acute rhinosinusitis is reserved for refractory or complicated cases and takes the form of sinus lavage to drain pus and decompress the affected sinus. This can be performed endoscopically or via external trephination and is combined with perioperative antibiotic cover and empirical use of saline douches and sprays.

**What are the complications of rhinosinusitis?**

The complications of sinusitis are due largely to the proximity of the paranasal sinuses to the anterior cranial fossa and orbit, as well as the venous drainage of the mid-facial structures into the intracranial venous sinuses.21

Up to 75% of orbital infections are attributable to sinonasal disease, with the ethmoid sinuses the primary source.22 Orbital complications include orbital cellulitis (fig 2), subperiosteal abscess, and intraorbital abscess, with the potential of blindness as a result of venous compression around the optic nerve. Orbital complications occur via direct transmission through the thin medial orbital wall (lamina papyracea) or by haematogenous route to the neighbouring orbital structures.

Frontal sinusitis may lead to osteomyelitis of the frontal bone (Pott’s puffy tumour) and may also destroy the

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**ADDITIONAL EDUCATIONAL RESOURCES**

**Resources for healthcare professionals**
- National Electronic Library for Health [www.nelh.nhs.uk](http://www.nelh.nhs.uk)—an online library for NHS staff, patients and the public
- Cochrane Library [www.thecochranelibrary.com](http://www.thecochranelibrary.com)—contains high quality, independent evidence to inform healthcare decision making
- BMJ Clinical Evidence [www.clinicalevidence.org](http://www.clinicalevidence.org)—resource for informing treatment decisions and improving patient care
- Clinical Knowledge Summaries Service [www.prodigy.nhs.uk](http://www.prodigy.nhs.uk)—up to date source of clinical knowledge on common conditions for healthcare professionals and patients
- GP notebook [www.gpnotebook.co.uk](http://www.gpnotebook.co.uk)—an online encyclopaedia of medicine

**Resources for patients**
- Patient UK [www.patient.co.uk](http://www.patient.co.uk)—free, up to date health information as provided by general practitioners to patients during consultations
- Facial Neuralgia Resources [www.facial-neuralgia.org](http://www.facial-neuralgia.org)—a “patient to patient” resource for those with face pain caused by disorders of the cranial nerves
- ENT UK [www.entuk.org/patient_info](http://www.entuk.org/patient_info)—medical information for patients on ear, nose, and throat disorders, conditions of the head and neck, and facial plastic and cosmetic surgery

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**Box 5 | Bacteriology of acute and chronic rhinosinusitis**

**Acute rhinosinusitis**

*Haemophilus influenzae*, *Streptococcus pneumoniae* (rarely: anaerobes, Gram negative bacteria, *Staphylococcus aureus*, *Moraxella catarrhalis*, *Streptococcus pyogenes*)

**Chronic rhinosinusitis**

Anaerobes, Gram-negative bacteria, *S aureus* (rarely: fungal)

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**Box 6 | Sinister features that should prompt referral to specialist**

- Unilateral signs (for example, unilateral polyp or mass)
- Bleeding
- Diplopia or proptosis
- Maxillary paraesthesia
- Orbital swelling or erythema
- Suspicion of intracranial or intraorbital complication
- Immunocompromised patient

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**Fig 2 | Orbital cellulitis**
posterior table of the sinus, leading to extradural and subdural empyema. Sinusitis may also lead to meningitis, intracranial abscess, and cavernous sinus thrombosis, the latter occurring via haematogenous spread through the superior ophthalmic veins or pterygoid venous plexus.

Contributors: KWA-S participated in the editing and writing of the article, and ASE did the literature search and contributed to the writing of the article. KWA-S is the guarantor.

Competing interests: None declared.


The dizzy clinic and the dictionary (etymology and otolegy)

In the “dizzy clinic” it is essential to find out whether a patient has a sensation of motion (vertigo), a feeling of unsteadiness (dysequilibrium), or both. Patients often use the word vertigo incorrectly, and frequently admit that they’ve read about it on the internet. In view of the etymological data, there is little wonder that we often struggle to elicit a clear clinical history in the dizzy clinic. Although clinicians maintain that vertigo is defined as “the sensation of motion when no motion is occurring relative to the earth’s gravity, in contrast to motion intolerance, which is a feeling of dysequilibrium, spatial disorientation, or malaise during active or passive movement.”1

However, vertigo is defined by the Oxford Dictionary of English as “a sensation of whirling and loss of balance, associated particularly with looking down from a great height, or caused by disease affecting the inner ear or the vestibular nerve; giddiness.”2 Interestingly, this offers “giddiness” as a synonym for vertigo. The two are perceived as different entities in the neuro-otological consultation, with giddiness having a somewhat looser implication, and potentially encompassing both vertigo and dysequilibrium. The Oxford Dictionary of English defines giddy as “having a sensation of whirling and a tendency to fall over or stagger; dizzy,” thereby introducing another synonym (dizzy), which might be considered even less specific in terms of neuro-otological symptomatology.

The origin of the word vertigo is in the Latin vertere, meaning to turn. Conversely, the word giddy is believed to be derived from the Old English word wigad, meaning insane or, literally, possessed by a god. To complicate matters further, the word dizzy is defined by the Oxford Dictionary of English as “having or involving a sensation of spinning around and losing one’s balance” and has its origin in the Old English word dysig, meaning foolish and thought to be related to Low German dusig, meaning giddy, and Old High German tusig, which translates as foolish or weak.
QUALITY IMPROVEMENT REPORT

Reduction of bloodstream infections associated with catheters in paediatric intensive care unit: stepwise approach

Adnan Bhutta,1 Craig Gilliam,2 Michele Honeycutt,2 Stephen Schexnayder,1 Jerril Green,1 Michele Moss,1 K J S Anand1

Context
Hospital acquired infections or nosocomial infections are an important problem in safe and effective health care. The Centers for Disease Control and Prevention (CDC) estimates that each year in the United States there are about 1.7 million nosocomial infections in hospitals and 99 000 associated deaths. The estimated incidence is 4.5 nosocomial infections per 100 admissions, with direct costs (at 2004 prices) ranging from $10 500 (£6300, €8500 at 2006 rates) per case (for bloodstream, urinary tract, or respiratory infections in immunocompetent patients) to $111 000 (£75 000, €113 500) per case for antibiotic resistant infections in the bloodstream in patients with transplants.1 With these numbers, conservative estimates of the total direct costs of nosocomial infections are above $17bn. The reduction of such infections forms an important component of efforts to improve healthcare safety in the US.

This problem is not unique to one country; the British National Audit Office estimated that the incidence of nosocomial infections in Europe ranges from 4% to 10% of all hospital admissions.2 In the United Kingdom, they further estimated in 2000 that nosocomial infections contributed to 5000 deaths each year at an annual cost of £1bn to the NHS.2,3 Nosocomial infections are more likely to occur in patients with compromised immune systems because of their age, disease, nutritional status, and external factors such as the presence of central venous lines, bladder catheters, or endotracheal tubes. Patients in intensive care units therefore have infection rates that are three times higher than those seen in patients in other hospital locations.4

Children are especially vulnerable.5 Additional factors include the involvement of multidisciplinary teams, the lack of physical barriers between bed spaces, and multiple attempts often required for placing monitoring devices, which further increase the chances of developing nosocomial infections.5

Bloodstream infections associated with catheters are the most commonly reported nosocomial infection in paediatric intensive care.6 The risk of infection and the associated mortality increases significantly according to the site of the catheter (for instance, femoral or subclavian),7 age, immune status, and paediatric risk of mortality (PRISM) score.5 Other factors that increase the risk of infection include presence of multiple catheters (venous and arterial) and transport of patients to other parts of the hospital.8,9 Mortality, increased length of stay in intensive care, and substantial additional financial costs have been reported.10 Evidence exists for measures such as universal barrier precautions at the time of catheter insertion, chlorhexidine

Abstract

Problem Bloodstream infections associated with catheters were the most common nosocomial infections in one paediatric intensive care unit in 1994-7, with rates well above the national average.

Design Clinical data were collected prospectively to assess the rates of infection from 1994 onwards. The high rates in 1994-7 led to the stepwise introduction of interventions over a five year period. At quarterly intervals, prospective data continued to be collected during this period and an additional three year follow-up period.

Setting A 292 bed tertiary care children’s hospital.

Key measures for improvement We aimed to reduce our infection rates to below the national mean rates for similar units by 2000 (a 25% reduction). Strategies for change A stepwise introduction of interventions designed to reduce infection rates, including maximal barrier precautions, transition to antibiotic impregnated central venous catheters, annual handwashing campaigns, and changing the skin disinfectant from povidone-iodine to chlorhexidine.

Effects of change Significant decreases in rates of infection occurred over the intervention period. These were sustained over the three year follow-up. Annual rates decreased from 9.7/1000 days with a central venous catheter in 1997 to 3.0/1000 days in 2005, which translates to a relative risk reduction of 75% (95% confidence interval 35% to 126%), an absolute risk reduction of 6% (2% to 10%), and a number needed to treat of 16 (10 to 35).

Lessons learnt A stepwise introduction of interventions leading to a greater than threefold reduction in nosocomial infections can be implemented successfully. This requires a multidisciplinary team, support from hospital leadership, ongoing data collection, shared data interpretation, and introduction of evidence based interventions.
skin disinfection, and use of catheters impregnated with an antimicrobial, but their implementation has not been explored. Reduction of catheter infection in intensive care can lead to decreases in morbidity and mortality in children and decreased costs for the family and society.

Outline of the problem
The national nosocomial infection surveillance (NNIS) system is a national voluntary tracking system resulting from a cooperative, non-financial relationship between more than 300 hospitals and the Centers for Disease Control and Prevention for tracking hospital acquired infection [www.cdc.gov/ncidod/dhqp/nnis.htm]. In June 1998 they published a pooled mean rate of bloodstream infection associated with a central venous catheter of 8.0 infections per 1000 days with a catheter in the paediatric intensive care unit (median rate of 7.1 infections/1000 days). In 1994-7 the rate in our 19 bed multidisciplinary unit was well above the national average. A multidisciplinary group of paediatric clinicians—including the director of infection control, critical care nurses, infectious diseases specialists, and critical care medicine physicians—formulated a strategy to decrease such infections in the unit. The hospital’s medical director served as a senior leader and advocate for this project.

Key measures for improvement
Our goal was to reduce bloodstream infection associated with a catheter by 25% within 24 months in children in intensive care.

Strategy for change
After a thorough literature search and meetings with all stakeholders, the multidisciplinary team implemented a stepwise programme of evidence based measures to reduce bloodstream infection associated with a catheter.

Maximal barrier precautions for all central venous catheters, November 1998—Based on guidelines from the Centers for Disease Control and Prevention, all physicians in the unit were asked to use the maximum barrier precautions during insertion of the catheter. This process included a complete surgical scrub and the use of a sterile gown, sterile gloves, and mask for the physician, masks for bedside nurses and other personnel, and skin disinfection and sterile drapes for the patient. We used a dedicated trolley with supplies for insertion or other invasive procedures that was moved to the patient’s bedside and restocked by unit technicians.

Catheters impregnated with antibiotic, July 1999—As part of a preventive strategy to reduce infection, we recommended the use of catheters impregnated with antimicrobials as cost effective and clinically effective. All multilumen catheters less than 25 cm long were impregnated with minocycline and rifampicin (rifampin).

Annual handwashing campaigns, March 2000—The Institute of Medicine (IOM) report showed that poor compliance with hand disinfection was associated with nosocomial infections. A performance improvement team developed a programme to increase compliance with routine handwashing. It was called “Friction Rubs Out Germs” and had a frog as a symbol and the message “I washed my hands . . . did you?” In addition, posters, hospital television video, before and after tests of knowledge, and articles in employee and medical staff newsletters emphasised the importance of hand disinfection including the use of alcohol gels and foams.

Design of physical barriers between patients’ beds in new unit, occupied April 2003—Our new unit mostly had private rooms instead of open bays. The previous 19 bed unit was in about 930 m² with 10 hand washing and 10 alcohol foam stations. The new 26 bed unit had 22 private rooms in about 1860 m², with 50 handwashing stations and 49 alcohol gel stations.

Chlorhexidine skin disinfectant, May 2003—The 2002 Centers for Disease Control and Prevention guidelines recommended the use of 2% chlorhexidine for skin disinfection and formed the basis for a change in our unit. Our medical staff used 2% chlorhexidine in 70% isopropyl alcohol in all age groups and reported no adverse local skin reactions.

Data collection
In this 292 bed paediatric facility, the infection control division has collected information on nosocomial catheter bloodstream infections since 1994. Infection control personnel make daily rounds in the intensive care unit and gather information on date of placement of the device, type of catheter placed, antibiotic versus non-antibiotic catheter, and duration of placement. They also collect information about positive results on blood cultures from the microbiology department.

We use Raad and Hanna’s definitions for bloodstream infections associated with catheters. We identify positive results in blood cultures by standard microbiological techniques and determined clinical relevance in consultation with the intensive care and infectious disease physicians. This information is entered on a database maintained by the programme. Quarterly reports are generated and sent to the medical and nursing leadership of the unit and the hospital.

Analysis and interpretation
The figure illustrates the effect of our ongoing efforts to decrease infection in our unit. A decrease occurred even though there was an increase in the number of catheters placed each year (242 in 1998 and 481 in 2005, a 98% increase) and an increase in the number of admissions to the unit (admissions increased by 17% and patient days increased by 21%) (table). The incidence of bloodstream infection decreased significantly over the study period (P<0.001) with a relative risk reduction of 75% between the start and the end of the study period (95% confidence interval 33% to 126%). The absolute risk reduction was 6% (2% to 10%) and the number needed to treat was 16 (10 to 35). In 1999 we introduced catheters impregnated with antibiotic
(rifampicin and minocycline). Over seven years (1999-2005), we have examined 2126 catheters. The infection rate with impregnated catheters was 4.2/1000 days with a central venous catheter compared with 6.4/1000 days with catheters without impregnation. We did not see any increased antibiotic resistance with use of this catheter. During the first five years of our study, Gram positive organisms accounted for 33% of isolates in the group with impregnated catheters and 32% in the catheters that were not impregnated. There were no differences in rates of methicillin resistant staphylococci between each group.

**Effects of change**

The successful stepwise implementation of various measures to decrease nosocomial bloodstream infections resulted in a steady and sustained decline in the rates of bloodstream infection associated with catheter use in our unit since 1998 (figure). Our annual handwashing campaigns increased compliance with hand disinfection before contact with patients in our unit from 47% in March 2000 to 82% in March 2005. Similarly, an observational survey by the infection control division found 98% compliance with use of maximum barrier precautions during insertion of catheters in 2005.

In 1998-2005, if our infection rate had stayed at the national mean, we would have had an additional 39 cases of bloodstream infection. As the estimated mortality attributable to each episode is 12.25%, this would have been equivalent to about 5-10 deaths during this time period.

This success in the paediatric intensive care unit has been translated into use of similar strategies in other units in the same hospital. The cardiothoracic unit has seen a fall in rates of catheter associated bloodstream infection from 8.4/1000 days in 2001 to 3.6/1000 days in 2005, representing a decline of 63%.

**Lessons learnt**

Using a stepwise approach, we were able to successfully lower the rates of catheter associated bloodstream infection in a paediatric intensive care unit. Our multidisciplinary group identified the problem, created a data collection system to measure baseline performance and ongoing improvement, and created a data reporting system that allowed all stakeholders to understand the extent of the problem and gauge the effects of changes in practice. We also introduced effective evidence based strategies to combat the problem and provided continued education for all staff members. The outcomes task force report from the Society of Critical Care Medicine published in January 2006 outlines a similar stepwise approach for clinicians interested in successfully implementing a quality improvement project. The Pittsburgh Regional Healthcare Initiative used a similar approach regionally in 66 intensive care units (including three paediatric units) and saw a decline in catheter associated bloodstream infection of 68% over four years.

Intensive and continued educational efforts by team members to educate unit staff together with the implementation of each new step, as well as renewed educational efforts when increases in infection rates were noted in particular time periods, are an important component of our success to date. Specifically, the infection control staff report quarterly data to the nursing and medical directors of the unit. Since 2004, all new employees in the unit are taught about this prevention project. At annual evaluation, all employees are required to perform validation of skills on aspects of catheter care such as insertion, weekly changes of dressings, and accessing lines while maintaining aseptic techniques. In 2005, our unit staff participated in the design of a web based learning module with

### Incidence of bloodstream infections in children in intensive care unit over study period (1998-2005)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No of admissions</th>
<th>Total No of central venous catheters inserted</th>
<th>Total No of days with catheter</th>
<th>No of infections</th>
<th>% of catheters infected</th>
<th>Infection rate/1000 catheter days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>1168</td>
<td>353</td>
<td>4402</td>
<td>8</td>
<td>2.2</td>
<td>1.8</td>
</tr>
<tr>
<td>1999</td>
<td>1031</td>
<td>343</td>
<td>3850</td>
<td>15</td>
<td>4.3</td>
<td>3.8</td>
</tr>
<tr>
<td>2000</td>
<td>1043</td>
<td>273</td>
<td>2123</td>
<td>13</td>
<td>6.5</td>
<td>5.6</td>
</tr>
<tr>
<td>2001</td>
<td>962</td>
<td>261</td>
<td>2120</td>
<td>12</td>
<td>4.6</td>
<td>5.7</td>
</tr>
<tr>
<td>2002</td>
<td>939</td>
<td>200</td>
<td>2112</td>
<td>13</td>
<td>6.5</td>
<td>5.6</td>
</tr>
<tr>
<td>2003</td>
<td>903</td>
<td>215</td>
<td>1896</td>
<td>11</td>
<td>5.1</td>
<td>5.8</td>
</tr>
<tr>
<td>1998</td>
<td>969</td>
<td>242</td>
<td>2325</td>
<td>20</td>
<td>8.2</td>
<td>8.6</td>
</tr>
</tbody>
</table>

*In 2001-5, five patients had two episodes of bloodstream infection from same catheter. This was not recorded for the years before this period.
KEY LEARNING POINTS

- A stepwise introduction of evidence-based interventions is effective in reducing catheter-associated bloodstream infections.
- A multidisciplinary team is needed to set up a data collection system to establish baseline prevalence of such infections and ongoing surveillance.
- The data need to be shared with all stakeholders so that the extent of the prevalence is known and efforts to reduce it are easier to gauge.
- Intensive and sustained education of all staff is needed for continued success in trying to reduce these infections.

Child Health Corporation of America (CHCA) on prevention of catheter bloodstream infections in the intensive care unit. This programme is required for registered nurses, advanced practice nurses, and resident physicians in the unit and has led to increased awareness among physicians, nurses, and other staff members about both nosocomial infections and the necessity to review and maintain central venous catheters or other devices as an integral part of daily routines. We believe that implementation of similar strategies to reduce such infections in other intensive care units can lead to substantial reductions in mortality and morbidity in this vulnerable group of patients.

We thank Betty Lowe, former medical director, for her inspiration and the medical and nursing staff in the paediatric intensive care unit at Arkansas Children’s Hospital for their clinical expertise in achieving these results to decrease bloodstream infections. Preliminary results from this project were recognised by the Child Health Corporation of America (CHCA) Race for Results award in 2004.

Contributors: AB, CG, KSIA, SS, MM, MH, and JG devised and conducted the project. AB and CG analysed data. AB and CG drafted the manuscript with help from all authors. AB is guarantor.

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Hardest job in the world

A medic friend of mine made a passing comment that I was lucky to “be at home”—having had a baby three months ago and now on maternity leave. It infuriated me at how naive it is to think we mothers are on a permanent holiday. Imagine being on call 24 hours a day, seven days a week, 52 weeks a year, with no protected bleep-free time, no feedback from the patient about how you are doing, no one to ask for help, no team for support, skipping meals because of the workload, vomit on your shirt but no time to change clothes, no healthcare assistants or nurses to clean up the urine and faeces. I could go on and on.

So when will motherhood be recognised as being the hardest job in the world?

Afrosa Ahmed  salaried GP, Middlesex (shimul@yahoo.com)
Postpartum splinting of ear deformities

Andrew J Lindford, Shehan Hettiaratchy, Fabrizio Schonauer

Postpartum splinting can completely correct congenital ear deformities and obviate the need for later surgery.

Congenital ear deformities are common and usually corrected surgically in childhood. Ear deformities are often first noticed by parents or non-specialist personnel such as midwives, general practitioners, and health visitors. Splinting of ear deformities in the early neonatal period has been shown to be a safe and effective non-surgical treatment.

The splint is made from a wire core segment in a 6-French silastic tube and held in place with adhesive skin closure strips. It is applied with no anaesthesia for three to four weeks.

We present three cases that show how different congenital ear deformities can be treated non-surgically, thereby obviating the need for surgery.

**Case reports**

**Case 1: constricted ear**

A male child was born at full term with bilateral constricted ears. No family history of ear deformity existed. In this deformity, the rim of the ear looks as if it has been tightened, rather like a purse string that has been pulled closed. We initiated splinting three days after birth and the programme was continued for one month. By 10 days the upper pole had expanded and a good result was seen at six months’ follow-up (fig 1).

**Case 2: Stahl’s ear**

A male child was born at full term with a unilateral Stahl’s ear deformity. Stahl’s ear is a helical rim deformity characterised by a third crus, flat helix, and malformed scaphoid fossa (fig 2). We initiated splinting three days after birth and the programme was continued for three weeks. By 10 days the correction was already apparent with disappearance of the third crus and a normal helical rim. The good initial result was maintained at six months (fig 2).

**Case 3: prominent ears**

A female child was born at full term with bilateral prominent ears. This deformity is defined by excessive height of the conchal wall or a wide conchoscaphal angle (>90 degrees). We initiated splinting three days after birth and continued with the programme for four weeks. Initially the ear was protuberant with an increased conchoscaphal angle, but after splinting the angle was reduced and the ear sat in a more natural position (fig 3).

**Discussion**

Congenital ear deformities are defined as either malformations (microtia, cryptotia) or deformations. Ear deformation implies a normal chondrocutaneous component with an abnormal architecture. Deformed ears are categorised as constricted (fig 1), Stahl’s (fig 2), or prominent (fig 3). The causes of these deformities are variable. Abnormal development and functioning of the intrinsic and extrinsic muscles of the ear may generate deforming forces. External forces applied to the ears, such as malpositioning of the head during the prenatal and neonatal periods, may also contribute.

Although ear deformities are anecdotally common, their true incidence is unknown. Around 5% of the white population are thought to have prominent ears, but this may be an underestimate as most reports do not include less severe anomalies.

Although some of these deformities resolve spontaneously, a large proportion do not. In today’s society, which puts great emphasis on appearance, the pressure...
on parents to seek surgical treatment if their child has an ear deformity can be great.

Several surgical techniques are available to treat these conditions. Although the results are often good, they can be unpredictable, especially for more complex deformities.

Splinting of ears in the early neonatal period has been advocated as an effective non-surgical treatment that often produces better results than surgery. The best results are achieved and the shortest period of splintage is needed when treatment is started immediately after birth. Moulding of the ears is possible then because maternal oestrogens render the ear of the neonate soft and malleable. After the first few days of life the ear becomes stiffer and less amenable to moulding, which makes splinting less effective.

Many kinds of splints and moulding materials have been described (table). Methods other than the one we used include self adhering foam designed to prevent skin damage from splints, temporary stopping (dental material) in combination with surgical tapes, dental bite and impression waxes, lead-free soldering wire inserted within an 8-French suction catheter, and thermoplastic material. Splint kits are now also available from various online sources.

Splinting is a simple, effective, and cheap way of treating even the most complex congenital ear deformity. It is non-invasive and avoids the risks associated with surgery and anaesthesia. It prevents later psychological distress by treating the deformity before it is perceived as a problem by the child.

The potential for splinting congenital ear deformities in early neonatal life needs to be better publicised. Tan and Gault reported that parents are the first to notice the deformity at birth in 61% of babies with prominent ears. They should be offered the possibility of splinting to correct these deformities. Postpartum clinical screening and non-surgical treatment are effective for congenital dislocation of the hip joint and congenital club feet. We recommend that similar measures should be taken for congenital ear deformities to obviate the need for surgical correction later in childhood. It is vital that neonatal paediatricians, obstetricians, general practitioners, and midwives are
Splinting materials and methods

<table>
<thead>
<tr>
<th>Material</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire core segment in 6-French silastic tubing¹</td>
<td>The splint is shaped and positioned in the groove between the helix and the antihelix and held in place with 3-5 skin closure strips</td>
</tr>
<tr>
<td>Self adhering foam designed to prevent skin damage from splints²</td>
<td>Applied at the bottom of the fold of the auricle and in the conchal fossa itself</td>
</tr>
<tr>
<td>Temporary stopping (dental material, a kind of gutta percha latex)³</td>
<td>Used to press and correct abnormal folding from anterolateral or posterosmedial surface; kept in place with skin closure strips</td>
</tr>
<tr>
<td>Dental bite and impression waxes⁴</td>
<td>Heated under hot tap water and moulded to achieve the desired normal contour and held in place with skin closure strips</td>
</tr>
<tr>
<td>Thermoplastic material⁵</td>
<td>Elastic and hard at room temperature but becomes soft in seconds at a temperature of &gt;60°C; warmed and softened material is applied with light pressure from the anterior and posterior side of the ear—it hardens in minutes</td>
</tr>
</tbody>
</table>

Educated about early detection and how to initiate treatment themselves.

The delay incurred by referring to a plastic surgeon may result in a missed opportunity to treat these deformities. If successful, an effective splinting programme could consign the surgical correction of all but the most severe ear deformities to the past.

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MRSA: to disclose or not to disclose?

During my first foundation programme appointment as a new doctor, I was called by the nurses to speak to a relatively young patient who had spent a considerable time on the ward. The patient was clinically well and progressing with physiotherapy, but a recent superficial nose swab had cultured methicillin resistant Staphylococcus aureus (MRSA). As a result, the patient had been promptly isolated to a side room, and the nurses now wanted a doctor to explain the swab result. They were adamant that I should be open about the fact that MRSA had been cultured as they felt withholding this information could have serious consequences if the patient found out by chance later.

As I was still inexperienced in such discussions with patients, I asked one of my seniors for advice. He advised a completely different approach, however. He felt it would be unwise to mention MRSA specifically because of the media sensationalism of this infection—it might upset the patient unnecessarily and have negative connotations. He suggested the best thing to do would be to explain that the patient had acquired a skin infection, which required isolation in a side room to prevent spread to other patients, and would need topical treatment to eradicate the infection, without stating explicitly that the infection was MRSA. He reasoned that, if a patient was found to have a urinary tract infection, you would not feel obliged to specify that Escherichia coli was the causative organism but would simply tell the patient that he or she had “an infection of the urine that requires treatment.”

When giving patients information about their condition, one must strike a balance between providing enough information to allow an informed choice without overwhelming the patient with unnecessary information. This case was more difficult because of the heightened media and public interest in MRSA and the reporting of several high profile cases of this “hospital acquired” infection. MRSA infection is perceived by patients to be different from other bacterial infections, and it therefore requires special consideration.

I have subsequently been asked to discuss MRSA positive statuses on several other occasions. I have found that, as long as patients’ perceptions of MRSA are explored and they are given accurate information about the implications of colonisation or infection, they are usually satisfied. To disclose or not to disclose MRSA infection is not the question, but rather how to disclose.

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How to make the prices of new drugs fairer

PERSONAL VIEW Julio Sotelo

The prices of new drugs are spiralling, and the rises seem impossible to contain. This is a huge challenge for patients, medical institutions, and governments, even in rich nations; the problem is so great nowadays that several countries consider it a matter of national security.

Several chronic diseases require lifelong treatment, an economic burden that many patients find almost impossible to meet. The impressive success of biomedical research in recent decades in curing and controlling countless diseases is increasingly eclipsed by the rising costs of all new treatments, even those for simple or self limiting disorders.

By way of practical comparison, consider the development of a highly successful device, a product of scientific and technological research that has revolutionised communications and nowadays is indispensable in the everyday life of millions of people—and a device that has been an enormous commercial success for its producers and developers: the mobile phone. When mobile phones began to be widely available, about 15 years ago, their cost was similar to that of the latest generation of phones, which are about a 15th of the weight and size of the early ones, have enormously better reception and transmission capacity, and include cameras and even, in the newest models, whole computer functions and television capability. In 1990 about 21 in every 1000 people had mobile phones; in 2005 the number reached 683 in 1000 people, and the projection for 2010 is 946. So, despite all the technological advances, the expense of research, the patents involved, and a huge amount of successful marketing, the price of a mobile phone has not increased significantly. The economic advantages for phone producers lie in the wide use of mobile phones, their popularity, and the large number of people who are always ready to exchange their phone for the latest model.

With drugs, the more the science advances, the more expensive the products become. The price of a new drug doesn’t relate at all to that of its immediate predecessor but is simply set by the manufacturer. Moreover, the more severe the disease, the more expensive will be the drug created to treat it, even if it is of dubious or limited efficacy (such as many of the new antineoplastic drugs). This is because—again, in contrast to most other goods—the customer can’t choose another similar product, postpone buying it, or forget about it and move on. Patients are caught in a trap, thinking that for the sake of their health they have to have the drug, regardless of its cost. The drug companies know this and act accordingly, setting prices capriciously.

To justify their prices they continually cite “research costs”; and patents protect their rights to the exclusive use and exploitation of the substance.

Another peculiarity of the drugs market is that a third party—the doctor—intervenes in the transaction. Doctors usually must decide between a standard treatment and several novel agents, and getting the best possible result for their patients rather than price is their priority. If any new drug (in my specialty antiepileptics and antidepressants are good examples) is, let’s say, 10% more effective than the alternative or 10% less prone to secondary reactions, it is logical that the doctor will select the new drug over the old one. What the doctor probably doesn’t consider is that the price of the new drug isn’t 10% more than that of the conventional one but two or three times more.

Thus the benefits to patients of the vast majority of new drugs may be marginally greater than those of the old ones, but their prices will be disproportionately greater.

Nowadays, any patient with a chronic medical condition—a high proportion of adults—should be taking a therapeutic or a preventive medicine. With the current prices, in many countries this will mean a monthly outlay equivalent to the rent of an apartment.

My suggestion to the regulatory agencies is this: why not cap the price of any new drug such that the increase over the price of the previous treatment is proportional to the improvement in effectiveness?

Why not cap the price of any new drug such that the increase over the price of the previous treatment is proportional to the improvement in effectiveness?

My suggestion to the regulatory agencies is this: why not cap the price of any new drug such that the increase over the price of the previous treatment is proportional to the improvement in effectiveness? If its effectiveness is 10% better, then the price should be no more than 10% or 15% more than that of its conventional equivalent. The pretext of research costs would be irrelevant; the drug companies, whatever their research costs, would be amply rewarded by the large number of new consumers. In the case of breakthrough drugs with no therapeutic predecessors, such as sildenafil, price could be determined by regulatory bodies on the basis of the potential market and the expected benefit to the population and would not depend on the caprice of the manufacturer. The financial gains to the manufacturer, though still immense, would be humanely proportionate.

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A gangster rap

Everybody needs a gang. They need the collective identity, security, and friendship, but most of all they need the sense of belonging. The royal colleges are gangs—their membership marked by polyester association ties, polymix suits, comfortable shoes, and bloated, mumbling, Godfathers—out to preserve their turf, using whatever means are necessary.

But not even the most hardened college goodfellows could cope on the inner city streets. Here groups of young men and women, blinded by their immaturity, mete out violence without thought or insight. They mark their territory with beautiful and terrifying “tags” sprayed across walls and windows. Weapons are ubiquitous—knives, screwdrivers, and sticks. Gang members are trapped in their 10-street cage, for they risk extreme violence if they enter another gang's pitch.

We doctors pick through the fallout in the emergency department and health centre. The trauma is both physical and psychological, and we drive by and “machine gun” out sedatives and antidepressants. The undertakers get their share of business too.

Handguns have become the latest terror weapon of choice in these remote inner city communities. Blame ping-pongs across the airways, and the police get a verbal kicking in a frenzied media attack. As ever, the solution is generally said to be just a question of resources and better policing. More cameras and police intrude further into these communities. The police are the unifying common enemy and a justification for existence of the gangs and the weapons that they carry.

So what is to be done in our segregated society? Should we let the gangs get on with killing each other while we get on with building gated communities?

I have a deeply conservative suggestion. We need the return of some form of national service—forcing young adults together, irrespective of race, religion, wealth, colour or gender, to work together, communicate, to be responsible, and to understand. This would involve physical activity but would also focus on worthy national and international projects—one big gang that might make us all feel that we belong.

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Patients keep out

The board is aware that despite our best efforts some patients are still managing to reach the hospital and see doctors. This is in flagrant contravention of trust policy, outlined below. Staff are reminded that caring for unauthorised patients may result in disciplinary action.

Referrals: All letters must be directed to the NHS Referral Gateway, where they will be screened by a qualified individual within three working days before being returned to the GP as falling outside our guidelines. Thresholds for acceptance are regularly revised as part of the trust’s award-winning PKO (“Patients Keep Out”) initiative.

In line with NHS targets, under 1% of referral letters are now addressed to a named consultant. Nevertheless, 47% still begin “Dear Doctor,” thus discriminating against non-medical employees. GPs will be targeted by our public relations consultants, Hay Trustus, to point out that only “Dear Trust,” “Dear Referral Gateway,” or “Dear Prioritisation Co-ordinator” are acceptable. From August, “Dear Doctor” letters will be returned unopened.

Informal communication between GPs and consultants remains a challenge. Spot checks are being stepped up on emails and telephone calls but there are reports of “accidental” meetings in supermarkets, at church, or at concerts unmonitored by CCTV. Staff must maintain a log of such meetings and sign an undertaking not to discuss patient care. Consultants married to GPs should consider their position.

Website: All NHS websites include only the names of board members and senior executives. Research has shown that doctors’ names simply attract referrals, so these have been removed. It would in any case be prohibitively expensive for trusts to find out the names of their medical staff.

On-site defences: The PKO car-parking policy has worked well, but patients have begun arriving on foot. Every entrance is defended by a line of smokers on intravenous fluids with catheter bags prominently displayed. Pharmacy can advise on luminous additives.

Nevertheless, determined patients may get to a reception desk. Hay Trustus reports that these are generally staffed by helpful people who enjoy serving the public. An urgent programme of redundancies has therefore been put in place. Each receptionist will be replaced by a “POLITE NOTICE” stating that verbal abuse will not be tolerated. These are widely displayed by organisations run so badly that customers are driven to unacceptable behaviour.

This will allow us to have patients removed by the police.

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**We shall never see his like again**

Frederick Parkes Weber, of the German Hospital, Dalston, London, probably had more eponymous syndromes named for him than any other doctor who lived. He was the son of Sir Hermann Weber, the German physician to Queen Victoria, who lived to be 95; Parkes Weber lived to be 99 and he published his last paper at the age of 97. This beat the record of his father, who published a paper in the *BMJ* when he was 95 entitled “On the influence of muscular exertion on longevity.”

The German Hospital, now being turned into luxury flats, served the German speaking population of London in a strictly non-denominational way, and both Marx and Joseph Conrad were once patients. The physicians had to be able to speak German, and the nurses were recruited in Germany. The German connection ended in 1940, when the staff were interned. It was said that some of the patients were sending messages to the Luftwaffe from the hospital roof.

Parkes Weber was regarded as the most learned physician of his time: Osler himself said so. When once Parkes Weber admitted at a meeting that he had not heard of a disease, cheering broke out; at last, there was something he did not know. Late in his life, he took to turning off his hearing aid once he had refuted a point made by someone else.

Parkes Weber was not only a physician, but—like his father before him—a mountaineer, antiquarian, and numismatist. In 1906 he gave his collection of 5000 coins to the British Museum and other institutions. His literary activity, apart from the 1000 papers that he published, was considerable. One of his non-medical works—which somewhat surprisingly went through four editions, and was in preparation for a fifth at the time of his death—was *Aspects of Death and Their Effects on the Living, as Illustrated by Minor Works of Art, Especially Medals, Engraved Gems etc* (published in 1910). Somewhat characteristically, no doubt, Parkes Weber considered this an unfortunately, but necessarily, abbreviated title of his work, which begins with the dryly understated words “Death is no unworthy subject for human consideration.” He goes on to say that the awareness that life must end in death is one of the most important motives of worthwhile human activity; presumably, without death, we would put everything off until another day.

The book is learned, with quotations from Greek, Latin, French, and Danish. Aeschylus is as familiar to Parkes Weber as the minor English poets of the 17th century and such arcana as the Forthgilian Medal of the Royal Humane Society awarded to Sir John Erichsen (of Erichsen's disease, concussion of the spine consequent upon railway injuries) for his work *Experimental Enquiry into the Pathology and Treatment of Asphyxia*.

Will we ever again see the polymathic like of Parkes Weber? How was such a man possible? Apart from a classical education, a congenitally insatiable curiosity, and a long life, what were the conditions that made him possible, though not inevitable?

It occurred to me that he had one great advantage over us moderns: he never in his life had to go to Tesco, find a parking space in the hospital car park, cook a meal, take the children to school, or book tickets online. As one American economist put it, you quickly learn that one servant is worth a household full of appliances. Parkes Weber's career was evidence of this great truth.

Theodore Dalrymple is a writer and retired doctor

**MEDICAL CLASSICS**

*The Strange Case of Dr Jekyll and Mr Hyde* By Robert Louis Stevenson

First published 1886

Do doctors need split personalities? Stevenson shows how important it was for a Victorian doctor to preserve his reputation by pursuing his pleasures secretly.

The scene is London and the fog swirls frequently. The plot unfolds in a thrilling way, by peeling off layers as characters reveal their experiences to the main narrator, Utterson, Dr Jekyll’s lawyer, until the final pattern of events becomes clear.

Jekyll is a well respected, middle aged doctor whose hobby is chemistry, carried out in a laboratory at the back of his house. He discovers a chemical combination that releases an alternative personality, his baser side: “Mr Hyde.” The actual physical changes are even more fantastical and are emphasised by the many film and television versions, which show the hair sprout, knuckles enlarge, face distort. Hyde enjoys unnamed viciousness without conscience, and Jekyll enjoys this, while being able in his own personality to concentrate on “good deeds.”

Apart from two episodes of violence (an attack on a child and a murder), we are never told what the dreadful pleasures are; this is left to our imagination. Utterson hints at the later physical consequences of youthful “depravity,” and homosexual activity has also been offered as an interpretation.

Hyde swallows an antidote to return to being Jekyll, until supplies run out. Then he asks another doctor, Dr Lanyon, to obtain more antidote for him. Lanyon does this, and Hyde turns into Jekyll under Lanyon’s eyes. Lanyon, overcome by horror, retires to bed and soon dies. Later the antidote ceases to work at all and Jekyll hides himself in his laboratory. Eventually Utterson and Jekyll's valet break down the door and find Hyde dead, but no sign of Jekyll. Papers explain what has happened.

At no stage do Utterson or Lanyon go to the police, but they protect and support Jekyll until the end: the trampled child’s family is bought off; the doctor’s reputation is maintained.

I first read this book many years ago, when my film producer husband was making a version of the story called *I, Monster*, originally intended to be in 3D. On re-reading, *Jekyll and Hyde* strikes me as brilliantly written and with many modern resonances. For instance, there doesn’t have to be much scientific fantasy about substances that become addictive and foster behaviour outside the range of the acceptable—alcohol, for a start, and other substances are also more readily accessible to doctors. We might think of this altered state as “dissociation,” and Stevenson uses the same term.

Finally, Dr Lanyon’s fate is unfortunate: it is now clearer we should not protect our errant colleagues.

Fiona Subotsky, immediate past treasurer, Royal College of Psychiatrists fs@subotsky@doctors.org.uk
A bridge over troubled waters

Piyal Sen

The Golden Gate Bridge in San Francisco is one of the world’s greatest tourist destinations. It is also, however, one of the most popular suicide locations. More than 13 000 people have killed themselves by jumping from the bridge since it opened in 1937. Amazingly, despite such startling evidence, no suicide barrier has ever been erected. The reasons put forward have included concerns about engineering, effectiveness, cost, and aesthetics. This in the country that perhaps attributes the highest cost to human life and in one of its wealthiest and most liberal states, California.

The Bridge focuses on suicide as a public health issue. There are almost twice as many suicides in the United States as there are homicides, yet the public focus remains firmly on homicide and the “moral panic” surrounding it. A particularly worrying trend in all industrialised nations is the disproportionately high rate of suicide among young men.

Preventive measures have included detoxifying town gas, packaging over the counter paracetamol in smaller quantities, curbing prescription of barbiturates, safer design of underground trains, tighter gun control laws, and restricted access to suicide hot spots. Along with a focus on high risk groups such as prisoners, the measures form part of a comprehensive public health suicide prevention strategy.

Director Eric Steel has a unique style of filming. He places two small digital video cameras at separate vantage points, one fixed at a wide angle to record the bridge and the water beneath it, and the other fitted with a powerful telephoto lens to film individual people as they walk across the bridge. These cameras recorded every daylight hour for an entire year, 2004, and the results were edited to make this 93 minute documentary. In total, 24 people committed suicide by jumping from the bridge that year, and all except one were captured on camera. Steel also met with the coroner of Marin County, where the bodies were taken, and he traced and talked to the families of the deceased, carrying out what he calls a “psychological autopsy,” and interviewed doctors and psychiatrists.

During filming, the crew kept to a protocol to raise the alarm and call the bridge police if they were suspicious that someone was about to jump. Six people were stopped this way, but it proved extremely difficult to predict any impending danger from the behaviour of the jumper.

The Bridge makes fascinating viewing, but could be difficult for the lay viewer to handle, especially as it has no definite narrative structure. It opens with a shot of people walking across the bridge. Suddenly, a man goes over the guardrail and jumps into the water. A US Coast Guard boat soon arrives and the search begins. The whole incident is shown through the eyes of an onlooker flying a kite. A female driver interviewed remarks, “It happens all the time.”

The film has some poignant moments. For example, the experience of schizophrenia is described as “like watching TV with 44 channels on at the same time.” One parent tries to explain a son’s suicide—“He thought his body was a prison, he felt trapped, and it was the only way he could be free.” Another parent said, “She was crying out for help.” The sole survivor describes his state of mind before and after the attempt—“I’m a loser. For most of us, the sun comes out, well, tomorrow is another day.” All these comments capture the anguish felt by someone out to destroy themselves and the distress felt by family members.

When the nature of the film was revealed, the Golden Gate Bridge District was again forced to confront the issue of erecting a suicide barrier. The authority reluctantly agreed to commission a feasibility study. Now, after the release of the film, it is reported that a barrier will be built after all. So The Bridge has succeeded where years of lobbying by mental health professionals and families of victims to build a barrier had failed. Public bodies running anti-stigma campaigns, like the UK’s Royal College of Psychiatrists, could learn a trick or two from this. I now eagerly look forward to a film on the state of the NHS, or on the implications of the new Mental Health Act. After all, reality television has the ability to change popular attitudes in the media-obsessed culture we live in today. The Bridge helped to restore my faith in the power of this culture.
Harry Macholin Ottway Brown

Former general practitioner West Vancouver, British Columbia, Canada (b 1927; q Trinity College, Dublin), d 26 June 2006.

After qualifying, Harry Brown served as a medical officer with the Royal Australian Navy before returning to Britain to work in general practice on the Isle of Wight. He emigrated to Canada to practise in Calgary, Alberta, in 1962. He later set up a single handed practice in west Vancouver and served the growing population for over 20 years. He was loved and respected by his many patients for his gentle, caring manner and military bearing. He leaves a wife, Babette; four children; and eight grandchildren.

Carol Smith

Bent Einer Juel-Jensen

Former physician Oxford (b 1922; q Oxford 1953; DM, FRCP, MRCGP), d 20 December 2006.

After qualifying in medicine in Copenhagen in 1949, Bent Einer Juel-Jensen moved to Oxford, where he spent the rest of his life. He became the Radcliffe Infirmary’s medical officer in 1960 and was university medical officer from 1977 to 1990. He took charge of infectious diseases in Oxford and pioneered treatment of herpes zoster with antiviral drugs. He provided medical support for the Oxford University Exploration Club and Royal Geographical Society and was friend and adviser of explorers such as Wilfred Thesiger. Visits to Ethiopia and friendship with Prince Ras Mangashia of Tigre stimulated his interest in Ethiopia. He was an art connoisseur, antiquarian book collector, and bibliographer. The fruits of his collecting skills enrich the Bodleian Library and Ashmolean Museum. He leaves a wife, Mary, and a daughter.

David A Warrell

Donald MacVicar

Former consultant obstetrician and gynaecologist Leicester Royal Infirmary (b 1916; q Edinburgh; MD, FRCOG), died from bronchopneumonia following a femoral neck fracture on 24 June 2006.

Donald MacVicar was born in Mexico, the son of a Scottish railway engineer. After qualifying he joined the Royal Army Medical Corps, serving in India until 1946. He trained in obstetrics and gynaecology in London and was a consultant in Leicester until he retired in 1982. His MD thesis on the effects of congenital syphilis was accepted by the University of Edinburgh in 1953. He always maintained a strong interest in gynaecological oncology, and he was a keen follower of sport, especially cricket, and ballet. He remained fit and independent until his final illness. Predeceased by his wife, Christine, in 1999, he leaves two sons and five grandchildren.

Bob Adams

David Robert Scarfe

General practitioner Oxford (b 1959; q University College London 1984; BSc, MRCGP, DRCOG), died from clinical depression on 21 December 2006.

David Robert Scarfe (“Dave”) did an intercalated BSc in the history of medicine. He specialised in general practice training at Huntingdon and then Presteigne. After trying out the life of a country general practitioner he changed to the city, moving to Oxford in 1991. Dave had great drive and enthusiasm and a love of cinema and theatre. He will be remembered for his caring nature and sense of humour. He died only a few weeks after a recurrence of clinical depression. He leaves two children.

Mark Woolstencroft

Robert Woolstencroft

Former general practitioner Calgary, Alberta, Canada (b 1909; q Westminster 1937), died from pneumonia on 18 July 2006.

Robert Woolstencroft’s six years of wartime military service included postings in the Mediterranean and Far East. He was surgeon on HMS Illustrious and served on HMS Daedalus. In 1948 he and his wife came to Canada to complete a term of medical service in northern Alberta. In 1950 they settled in Calgary, where Robert practised medicine and was provincial president and Alberta member of the Board of Representatives of the College of General Practice (Medicine) of Canada. In 1963 he joined the College of Physicians and Surgeons of Alberta and served as its third registrar until he retired in 1974. Predeceased by his wife, Diana, in 2002, he leaves five sons and nine grandchildren.
MINERVA

The standardised mortality ratio is a commonly used measure of performance in intensive care. But, as a simulation study in Chest (2007;131:68-75) shows, even a small increase in the number of transfers of critically ill patients to other acute care hospitals can significantly bias the ratio. This may influence conclusions about the quality of the intensive care unit from which the patient was discharged. The researchers say this finding limits the use of the standardised mortality ratio as a quality measure.

Different surgical approaches to resurfacing the hip influence the perfusion of the femoral head in different ways. In 20 operations, surgeons measured the concentration of the antibiotic cefuroxime in bone samples taken from the femoral head as a proxy for perfusion, and they concluded that the transgluteal approach offers significantly greater perfusion than the posterolateral approach (J Bone Joint Surgery (Br) 2007;89B:21-5).

Nearly half (44%) of children with confirmed appendicitis present with six or more atypical features, making this a difficult diagnosis. A white cell count of less than 10 000/mm³ and an absolute neutrophil count of less than 7500/mm³ are the strongest negative predictors of acute appendicitis in children presenting atypically. Other atypical features are a lack of percussive tenderness, a lack of guarding, and no nausea (Academic Emergency Medicine 2007;14:124-9).

A capsule containing four different classes of antihypertensive drugs in doses that are a quarter of the standard dose of each drug has proved better at maintaining low blood pressures than a standard single dose of any one drug (Hypertension 2007;49:272-5). The drugs were atenolol, bendrofluamide, captopril, and amlodipine. A higher proportion of patients achieved a blood pressure of less than 140/90 mm Hg with the combination (60%) than with any individual drug (15-45%).

A randomised trial of auricular acupuncture given for pain relief after arthroscopic knee surgery performed under general anaesthesia found that acupuncture reduced the need for ibuprofen performed under general anaesthesia found that for pain relief after arthroscopic knee surgery the combination (60%) than with any one drug proved better at maintaining low blood pressures than the standard single dose of any one drug (Hypertension 2007;49:272-5). The drugs were atenolol, bendrofluamide, captopril, and amlodipine. A higher proportion of patients achieved a blood pressure of less than 140/90 mm Hg with the combination (60%) than with any individual drug (15-45%).

A 34 year old woman presented with a two year history of a tender, purplish-brown nodule at the site of a longstanding “mole” on her umbilicus. She had no unusual menstrual symptoms and had recently had an uncomplicated pregnancy. Excision of the lesion and histological examination showed a focus of endometriosis but no melanocytic naevus. Umbilical endometriosis may present with a slowly growing lesion. Characteristic symptoms of periodic pain and bleeding are not always present, and the appearance may mimic malignant melanoma.

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A “store and forward” telemedicine approach where text and digital images are prepared by the referrer and forwarded electronically to a specialist, who then returns an opinion on diagnosis and management, is unlikely to dramatically reduce the need for conventional clinical consultations while still maintaining clinical safety, concludes a Health Technology Assessment monograph (2006;10(43)). Of the 92 telemedicine cases in this randomised controlled trial, 53 were judged to also require a face to face consultation. Overall, 30% of cases would not have needed to be seen face to face, although two squamous cell carcinomas would have been missed.

Conducting research into psychotherapy is different from researching most other forms of “treatment.” In drug trials, for example, there’s no need to worry about variation in the pills—but in psychotherapy, one therapist may do “it” differently from another and differently for different patients. Monitoring, filming, and using manuals all help to provide consistency, but the cost is that this deviates from “real life” practice. (American Journal of Psychiatry 2007;164:7-8).

Education is the name of the game if you want to protect yourself from dementia. Regardless of the pathological criteria adopted, educational status predicts dementia status among people with Alzheimer’s disease. The results support the “cognitive reserve” hypothesis, which argues that people with greater cognitive reserve, as reflected in years of education, are better at coping with the brain pathology of Alzheimer’s disease, often without observable deficits in cognition (Neurology 2007;68:223-8).

Sleep deprivation results in less activity in the brain’s hippocampus—a region critical for memory—as seen on functional magnetic resonance imaging. People who had a full night’s sleep were better at recalling a series of visual images than those who were deprived of sleep. Activity within the hippocampus and also its function seem to be altered by insufficient sleep (Nature Neuroscience 2007 Feb 11).

Readers of the BMJ are being urged to spread the word about the UK’s hospital travel costs scheme (go to www.dh.gov.uk and select “Policy and Guidance”, then Policy A-Z, then H). Under the scheme, patients on low incomes can claim their travel expenses for getting to more appointments, but Macmillan’s report on the costs of cancer found that only 4% of those facing excessive travel costs were receiving help. Most seemed unaware that such a scheme existed.