

work I've quoted liberally) has made a huge contribution to this important debate by producing for the British Library a summary of important papers and reports on animal research from all relevant disciplines. She concludes: "I began work on this book, knowing relatively little about the issues and thus, as someone of rational disposition, with no very marked tendency towards any of the major camps in the debate. I end in much the same state of mind."

Richard Smith *editor, BMJ*

Competing interest: The *BMJ* hardly ever publishes animal research. This is not because we are against animal research but rather because we favour research that may have results that are directly applicable for clinicians and those making public policy. While doing a degree in experimental pathology in 1973 I implanted stem cell leukaemias into rats. I wrote this editorial a

few days after our pet rabbit was killed by a fox. Her death upset me much more than I ever expected.

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Insecticide treated bed nets to prevent malaria

The challenge lies in implementation

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Evidence of the impact of insecticide treated materials, either bed nets or curtains, on morbidity from malaria and mortality from all causes in children has been growing over the past 10-20 years.^{1,2} The studies have been carried out mainly, although not exclusively, in Africa (11 clinical trials out of 18 in the Cochrane review), the continent where 80% of all clinical cases and over 90% of all malaria deaths are estimated to occur. These data provide strong evidence that insecticide treated materials can substantially reduce childhood mortality, at least in places where malaria is a major contributor to death. However, all these trials were carried out in a way impossible to reproduce on a large scale and they measured efficacy—the potential impact of insecticide treated materials when implemented in almost ideal conditions. Problems can arise when bed nets are promoted outside the context of a clinical trial—though a paper in this week's *BMJ* (p 270) also suggests an approach that might circumvent some of them.³

The impact of insecticide treated materials on mortality was determined by intervention studies carried out in four African countries.⁴⁻⁷ All reported an impact on all cause childhood mortality, although this was not uniform (ranging from 15% to 63%) and fell with increasing intensity of malaria transmission. However, when the risk difference was used the insecticide treated materials seem to work at least as well in areas of high endemicity as in areas of lower endemicity.⁸

The first answer to the question of what impact insecticide treated materials would have outside of controlled trials came from the Gambia, where an epidemiological evaluation of the national insecticide treated bednet programme (NIBP) was undertaken. Bed nets are commonly used in the Gambia, and the national programme had the objective of treating with permethrin nets already in use in all large villages (400 people or more) over a two year period. During the first year insecticide was distributed free of charge, but in subsequent years a small fee was demanded. In the first year about 80% of existing nets were treated with

insecticide, and a 25% decrease in all cause mortality was observed among children under 10.⁹ However, the following year the introduction of the fee for the insecticide resulted in a drop in coverage (only 14%) and no impact on mortality.¹⁰

Here is a problem for the managers of malaria control programmes: the use of insecticide treated materials on a large scale can result in huge health benefits, and they are a cost effective intervention.¹¹ In many cases, however, the introduction of insecticide treated materials requires behavioural changes, particularly where the use of bed nets is low, so it is not always clear how these benefits can be obtained. Moreover, some form of cost recovery might have to be built into the programme—simply in order to sustain it—but this might have an important adverse influence on coverage. In particular, a policy of cost recovery will reduce access for poorer groups in the population. An apparently simple intervention thus becomes difficult to implement when the issues of coverage, accessibility, equity, and sustainability are considered. We need new approaches to tackle these issues.

Social marketing uses the methods of commercial marketing and applies them to a product with a social benefit. It has already been successfully used to promote the use of condoms, contraceptives, and oral rehydration solutions, and in this week's issue Abdulla et al describe its use for promoting insecticide treated bed nets in the Kilombero valley in Tanzania (p 000).³ The results are impressive, not only because of the rapid increase of net ownership and the resulting high percentage of treated bed nets in just three years but also because of the dramatic impact on anaemia, parasitaemia, and splenomegaly in children aged under 2 years. This indicates that the social marketing programme succeeded in convincing the population of the usefulness of using insecticide treated materials, even though a payment had to be made.

The campaign described by Abdulla et al was carefully planned and used a pragmatic approach involving the public and private sectors.¹² Several points

are worth emphasising. Firstly, the campaign was based on the results of market research that helped to identify the most suitable brand and logo for the products to be promoted and also the most effective message for the promotional campaign. Secondly, the prices for the bed nets and the insecticide were adjusted according to the willingness to pay of the local people and thus their cost was only partially recovered. This implies that programmes to promote the use of insecticide treated materials will still need external financial support. Thirdly, distribution of the bed nets was done through a network of agents (shopkeepers and community leaders as well as health workers) trained for this purpose and involved the public as well as the private sector. Fourthly, the issue of accessibility of vulnerable groups was tackled by setting up a voucher system for mothers of young children and pregnant women so that they could buy insecticide treated bed nets at a lower price.

Since the use of insecticide treated bed nets has substantially reduced the incidence of childhood anaemia, a leading cause of death, it probably has an important impact on mortality. If this impact is confirmed by the data from the demographic surveillance system, it will further strengthen the case for insecticide treated materials, despite the worries expressed about their long term effect and in particular on the possible delay of the acquisition of immunity.¹³ The Kilombero net project is a success story based on broad partnership, an approach that the World Health Organization's "Roll Back Malaria" initiative encourages. Its success should convince managers of malaria control programmes and international donors to invest more in promoting insecticide treated nets and curtains.

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Cheating at medical school

Schools need a culture that simply makes dishonest behaviour unacceptable

The *BMJ* recently featured a strong response to what was judged an inappropriately lenient reaction by a medical school to a student cheating in an examination.¹ Reviews of the literature suggest that we have insufficient reliable data about the extent of this phenomenon, its rate of change, its pathogenesis, its prevention, or its effective management.²⁻⁴ Furthermore, because of the nature of cheating and the methodological difficulties entailed in its study, the requisite evidence based conclusions will probably never be available. Yet, much can be concluded and acted upon on the basis of common sense and concepts with face validity, even without double blind studies.

There is general agreement that there should be zero tolerance of cheating in a profession based on trust and one on which human lives depend. It is reasonable to assume that cheaters in medical school will be more likely than others to continue to act dishonestly with patients, colleagues, insurers, and government. Given the enormous power over life and death which doctors possess, we must strive to reduce the likelihood of the

troubling question by patients: "Doctor, are you doing this for me, or am I doing this for you?"

The behaviours under question are multifactorial in origin. Firstly, there are familial, religious, and cultural values that are acquired long before medical school. For example, countries, cultures, and subcultures exist where bribes and dishonest behaviour are almost a norm, while others have much higher standards of ethical conduct. There are secondary schools in which neither staff nor students tolerate cheating and others where cheating is rampant; there are homes which imbue young people with high standards of ethical behaviour and others which leave ethical training to the pernicious influence of television and the market place.

Medical schools reflect society and cannot be expected to remedy all the ills of a postmodern hedonistic society. The school's major responsibility is to focus on the young people who present themselves for admission and to nurture and enhance positive ethical behaviour. The selection process of medical students

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