Psychological costs of screening

May sometimes be bad enough to undermine the benefits of screening

Screening inevitably has psychological costs—particularly for those who receive bad news or false positive results. The increase in screening that is occurring in many countries demands that these costs be investigated, particularly as some may be avoidable.

A positive result in any screening test is invariably received with negative feelings,^{1,5} but support at the right time may help considerably. Telling patients that they had hypertension led to absenteeism, lower self esteem, and poorer marital relationships,⁶⁻⁸ but these problems were reduced by regular supportive follow up in a controlled trial.⁹

Some of those who are told that they have had a positive result in a screening test will subsequently be found not to have the disease. It might be expected that this would be a source of relief, but this supposition is not supported by the few studies that have followed up such patients. Once the seeds of doubt have been sown they seem to be difficult to remove. Bloom and Monterossa studied people who had initially been told that they were hypertensive but who after three more tests were judged normal.¹⁰ The patients reported more symptoms of depression and a lower state of general health than a matched group initially found to be normotensive. Another study found that pregnant women who had had an abnormal fetoprotein result were still significantly more anxious three weeks later, when the results of subsequent testing had shown their fetuses to be unaffected, than were women who had initially received a negative result.¹¹ The parents of newborn children who were falsely diagnosed on routine screening as having congenital hypothyroidism reported great strain on their marriages and difficulties in their relationships with their children.¹² Although they knew that the results of subsequent testing were negative, they continued to be plagued by questions and uncertainties about their children's health. Possibly if the risk of a false positive result was fully explained at the outset to participants in such programmes such adverse effects might be diminished.

A negative result of a screening test is usually reassuring,^{3,13-15} and being given the result rather than being told to assume that no news is good news provides patients with more reassurance.⁵ A negative result given without explanation or advice may, however, have unwanted effects. For example, it may reinforce an unhealthy lifestyle,¹³ bolster a pre-existing sense of invulnerability,¹⁶ and make participants less likely to return for subsequent testing. There have been no long term follow up studies to assess how people interpret a negative result or how it affects their subsequent behaviour. Some authors have gone so far as to call for a halt to screening until such data are available.¹⁷

The importance of counselling before screening is often acknowledged, but there are few data to show what information participants should be given to ensure informed uptake and to minimise adverse emotional and behavioural consequences of participation. Such questions badly need researching with randomised controlled trials.

Technical advances, particularly in biogenetics, and increasing expenditure on health in many countries are resulting in more people being screened for more conditions over greater spans of their lives.¹⁸⁻²⁰ Unless the emotional and behavioural consequences of such screening programmes are

properly monitored we will not know their true costs and hence net benefits. We will be uncertain of their value for money and even of whether they should be provided at all.

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Ridding the world of hydroxyquinolines

These "antidiarrhoeal" drugs are dangerous and ineffective

Each year diarrhoea kills four to five million children under 5 years old in the developing world.¹ The World Health Organisation estimates that a child on average has three episodes of diarrhoea annually, which results in 1.3 billion episodes worldwide. Many of these episodes are unfortunately treated with hydroxyquinolines, which are ineffective and dangerous.

WHO recommends that acute diarrhoeal diseases should be treated with correct rehydration and continuous feeding, with antibiotics being used for dysentery and cholera.² Most (90%) of all watery diarrhoea may be managed with oral rehydration therapy alone, but many inappropriate drugs are still given routinely to infants and children with acute diarrhoea. Among the so called "antidiarrhoeal agents" are hydroxyquinolines. Furthermore, hydroxyquinolines offer no advantage over antiamoebic drugs for treating patients with symptoms of amoebiasis, and carriers who do not have symptoms probably do not need treatment.

Concern about the toxic effects of hydroxyquinolines dates back to 1932.^{3,4} Between 1956 and 1970, 10 000 people in Japan suffered from paralysis and partial loss of sight, which

was diagnosed as subacute myelo-optic neuropathy (SMON).^{5,6} There is strong circumstantial evidence that clioquinol caused this condition. Patients with subacute myelo-optic neuropathy were highly likely to have taken clioquinol (a hydroxyquinoline), and the number of cases fell dramatically after clioquinol was withdrawn from Japan.^{7,8} In an analysis of neurotoxicity of hydroxyquinolines in countries other than Japan Baumgarten *et al* found that about half of the reported cases of neurotoxicity were probably (or possibly) related to hydroxyquinolines; these adverse effects, especially isolated optic atrophy in children, have occurred throughout the world. The association with neurotoxic reactions has led to the banning of gradual withdrawal of hydroxyquinolines in some countries. But hydroxyquinolines such as di-iodohydroxyquinoline (iodoquinol) are still widely marketed under many brand names in both developed and developing countries. Hydroxyquinolines are also available combined with other drugs that have no proved therapeutic effect for treating acute diarrhoea but carry additional risks of adverse reactions.

There is a large discrepancy between the adverse effects mentioned in most pharmacopoeias¹⁰⁻¹² and those listed in package inserts. In Egypt in 1986 package inserts for combination drugs containing di-iodohydroxyquinoline (Diamycin dry suspension, Cabion forte, Paramibe compound, Enteroguanil suspension) included indications such as non-specific infections, summer diarrhoea, food poisoning, bacillary dysentery, enteritis, and dyspepsia; use of the drug as an intestinal antiseptic was also advocated. None of these package inserts contained any information about the adverse effects associated with di-iodohydroxyquinoline.

The notions of "recommended dose" and "duration of treatment" often lose their relevance in the developing world, where uncontrolled sale of drugs to illiterate consumers is common. One study of subacute myelo-optic neuropathy in India showed that almost half of the patients with diarrhoea seen by a medical consultant had taken more than the total recommended dose of hydroxyquinolines before they visited the doctor.¹³

The essential drugs policy of WHO is designed to encourage treatment of common diseases with drugs of proved efficacy and safety. It also helps to ensure that concise, accurate, and comprehensive information from unbiased sources accompanies the drugs.¹⁴ No halogenated hydroxyquinoline preparation is included in the WHO essential drug list. Oral rehydration treatment is the only proved cost effective method to treat acute diarrhoea routinely, and the economic saving from treating diarrhoeal diseases according to the WHO recommendations should be considerable.¹⁵ Hydroxyquinoline derivatives have now been banned or withdrawn in many countries including Bangladesh, Cyprus, Denmark, Italy, Japan, and the Philippines; and clioquinol has been banned in the Dominican Republic, Malaysia, Nepal, Pakistan, Spain, Sweden, and the United States.¹⁶⁻¹⁸

Immediate action is needed on the remaining long list of currently marketed products containing hydroxyquinolines alone or in combination with other ineffective and possibly dangerous drugs. Proper labelling of side effects and information about the questionable therapeutic effect of anti-

diarrhoeal drugs are clearly needed, but they will not prevent their continued extensive and unnecessary use. Many hydroxyquinolines are produced by national companies, and their availability may be limited by restrictions on local manufacture. The fact that di-iodohydroxyquinoline is now marketed in countries where clioquinol has been banned illustrates the present inconsistency in policy.¹⁹ Health policy makers, health professionals, and drug companies are responsible for the mismanagement of diarrhoeal diseases in developing countries, and not until all these antidiarrhoeal drugs have been removed from counters worldwide will this scientific and ethical credibility be restored.

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Correction

Radiology about to go digital

A printer's error occurred in this editorial by Dr Richard M Dawood (5 August, p 340). The work has been largely conducted by physicists, computer scientists, and engineers and not by psychiatrists as published.