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Britain's gift: a "Medline" of synthesised evidence

Worldwide free access to evidence based resources could transform health care

America's two greatest gifts to the world are jazz and Medline. Now the British government has the chance to match Medline by funding universal free access to what might be described as "a Medline of synthesised, reliable, and up to date evidence." This could be even more useful to clinicians and patients and has the potential to change health care across the world.

Medline is an electronic index of nearly 4500 journals from over 70 countries compiled by Washington's National Library of Medicine. It has been available online since 1971. Later, Hilary Clinton, then America's first lady, announced worldwide free access to Medline through the internet (www.ncbi.nlm.nih.gov/entrez/). Since then the number of people using it has increased exponentially, and many of them are patients. There is no better free starting point for finding high quality medical information.

But a search of Medline may be frustrating. Although Medline often includes abstracts and free access to the full text of some articles (including those in the *BMJ*), clinicians and patients may be overwhelmed by an avalanche of references and abstracts. They only rarely have the time and resources to sift through the output of a search, let alone obtain the full texts of all the articles that may answer their questions. Clinicians and patients need ready access to syntheses of valid, up to date information relevant to their questions.

Recent years have seen several initiatives to serve these needs more effectively. A consensus is growing that the most valid answers to their questions will come from systematic reviews based on rigorous research methods. The most obvious manifestation of this trend is the international Cochrane Collaboration.[1 2] The Cochrane Library (www.update-software.com/cochrane/), brings together an unequalled collection of reviews of research about the effects of healthcare interventions.

Cochrane reviews tend to address fairly specific questions—for example, is echinacea helpful for a cold? Reviews published in other web based sources, such as *Clinical Evidence* (www.clinicalevidence.org, published by the BMJ Publishing Group—see competing interest) draw on the evidence in these specific reviews to address broader questions—for example, what's good for a cold?[3] And because *Clinical Evidence* is based on questions that clinicians and patients want answered, this may be the right starting place for a search for relevant evidence.

Whether a question implies the need for a specific or a broad systematic review, a mountain of evidence remains to be synthesised before it will become clear just which questions can be answered using existing research evidence. But what are clinicians and patients to do if their search of these new resources shows genuine uncertainty about the relative merits of alternative forms of care? Their most imaginative step would be to consult the *meta*Register of Controlled Trials (www.controlled-trials.com) to assess whether a relevant controlled trial was open to participants,[4] and, if so, to agree that "the trial would be the treatment."[5]

Imagine the benefits of linking these sources of information electronically—and of making this linked resource freely available. A whole new way of practising medicine opens up. A clinician and a patient trying to solve a problem together would start by searching *Clinical Evidence*, which might provide a helpful summary of the evidence. If they wanted to check the pedigree of the summary they could "drill down into" the Cochrane and other systematic reviews on which it had been based. This evidence could then inform decisions about treatment, which would take account of the patient's preferences as well as the availability of the preferred treatment.

If their search showed uncertainty about the best course of action then they might look to see if a relevant clinical trial was underway. The patient might choose to enter such a trial, particularly since patients tend to do better when they take part in trials.[6] The wider benefit might be that we would more quickly know the answer to many important questions. For example, we still do not know which treatments are useful for acute stroke, but if every patient in the world experiencing a stroke were admitted to trials we would have enough patients within 24 hours to answer many of these questions. If there were no trials underway addressing the patient's question then the patient and doctor would send a signal to a central database that the question needed answering. This would allow trials to be designed to answer the questions that mattered most to patients.

Is this scenario of electronically linked resources serving the interests of patients and doctors unrealistically fanciful? We believe it is essential. We need to take advantage of the possibility of designing intelligent software that will flag the arrival of new data or substantive changes in the evidence. Without such help it will be increasingly difficult for people to keep information up to date and trustworthy.

A way should be found to make this information—like the information in Medline—free to anyone who has access to the world wide web. Current Controlled Trials

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has already undertaken to provide worldwide free access to the *meta*Register of Controlled Trials. Many clinicians and people in higher education already have free access to both the Cochrane Library and *Clinical Evidence*, and both these resources are either already (or very soon will be) provided free to everybody in the 100 poorest countries in the world. Why stop there? These resources could be free to everyone at the point of use. Wide access would also ensure that errors would be spotted and quickly corrected.

Is there a role—possibly a responsibility—for Britain here? Britain has given the world Shakespeare, newtonian physics, the theory of evolution, parliamentary government—and the randomised controlled trial. Tony Blair's speech at the Labour party conference suggested that the response to the attacks of 11 September must be not just war but also to build a new world that ultimately destroys extreme inequities. Universal free access to an integrated information resource built from the Cochrane Library, *Clinical Evidence*, and the *meta*Register of Controlled Trials would go some way to reducing the inequities in access to information for improving health care. For a cost which might be as little as 10p for each Briton, the British government has the chance to match Medline by funding universal free access to the system we have outlined. It would provide a lasting memorial of the Queen's jubilee next year—and, in her honour, perhaps it could be called "Lizzie."

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RS is chief executive of the BMJ Publishing Group, which publishes *Clinical Evidence*. He is, however, paid a fixed salary and would not personally gain financially from extra sales of *Clinical Evidence*. IC is director of the UK Cochrane Centre, but has no financial involvement in the Cochrane Library. RS and IC are also members of the international advisory group for Current Controlled Trials but have no financial interest in it.

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Income, health, and the National Lottery

The lottery is one of the world's largest randomised trials

Most people in the United Kingdom have taken part in one of the world's largest trials of one of the most important determinants of health. Unfortunately, neither the participants nor the organisers know about the trial and no one has collected follow up data.

Each month, more than £150m is randomly redistributed among 60% of the adult population in the National Lottery.[1] Over £16bn has been redistributed since the lottery began in 1994. Changing the redistribution of a small fraction of this money could create a randomised trial that reliably assessed the speed and extent to which increases in income improve health. The basic study design would be simple. Instead of lump sums, winners would receive regular, income-like payments (such as £40, £80, or £160 a month for a decade). Follow up of these winners, and a large random selection of non-winners, would assess effects on outcomes such as diet, smoking, admission to hospital and broader indicators like employment, social participation, and entrepreneurship.[2] Most people buy lottery tickets and winning is purely chance, so the study would be, in effect, a randomised trial of income supplementation in a group drawn at random from the majority of the UK population.

If just 5% of one year's worth of prize money (2.5% of sales) was redistributed in this way the resulting fund of more than £100m, and the interest it would generate, could pay for all study costs and prizes. The prizes could, for example, allow 10 000 people to receive £40 a month for 10 years, 5000 to receive £80, and 2500 to receive £160. Standard tickets that didn't win the first time could be re-entered into the extra "pay packet winner" draw (which would allow enrolment targeting if reuse was restricted, for example, to those receiving a social security benefit). Alternatively, a new type of ticket could be sold in the usual outlets.

The project would be entirely self funding and be "win-win" for all parties:

- Some participants might appreciate the new type of prize, especially if there is a higher chance of winning and they can reuse a non-winning normal ticket. Certainly, regular payment prizes are accepted overseas.
- People concerned about possible adverse effects[3] might welcome the chance to assess the benefits of more modest winnings.
- The lottery operator may welcome making more than 10 000 people better off for 10 years, as well as making millionaires. The novelty could revitalise sales. A television documentary following some participants could generate renewed interest.
- The government's stated aim is to direct lottery funds more actively to health, education, and the environment "with particular focus upon the needs of those who are most disadvantaged in society." This proposal fits that aim. It is also in keeping with the move towards evidence based social policy.[4] If a government alters fiscal policy and increases expendable income among, for example, those receiving benefits, how much is needed to see health and other improvements? And how soon are the effects seen?

The appropriate role of controlled evidence in social policy is controversial.[5–8] Here, it would be important to recognise that income is only one component of socioeconomic status and that while evidence is gained at an individual level, policy implications would be at a societal level.[9] The evidence base guiding such policy decisions clearly has to be

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