Putting evidence into practice
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A training module is described in which experienced health care managers from developing countries explore the challenges to be faced when attempting to use the results of systematic reviews of scientific studies on health care interventions in policy and practice.

It is clearly desirable to have evidence that health care interventions are likely to be effective before they are undertaken. Measurements of cost-effectiveness can be used to prioritize interventions (1), and sounder methods of evaluation are now being advocated. Systematic reviews of the literature locate, assess and combine evidence from scientific studies and can provide reliable summaries of the effects of interventions (2).

A systematic review differs from a traditional review in that it is led by a well-defined research question, follows a pre-established protocol, relies on extensive searches for both published and unpublished literature, and provides a synthesis of research findings. If well conducted, systematic reviews provide an unbiased, comprehensive summary of all the reliable evidence that is available. Managers, clinicians and consumers are beginning to use them to inform their decision-making. The present article explores how managers experienced in delivering health care in developing countries could use systematic reviews in matters of policy and practice.

Systematic reviews were chosen from the Cochrane Database (3). They represented a range of certainties: areas where there was good evidence of effectiveness but where the interventions were not a part of routine practice (amodiaquine treatment of malaria, and partner treatment in trichomoniasis (4,5)); interventions where there was good evidence of ineffectiveness (routine nutritional supplementation in pregnancy (6)); and interventions where the evidence was not compelling, but where a small beneficial effect could not be excluded (routine iron supplementation in pregnancy (7)).

The 21 participants had all been managers in developing countries with underprivileged populations. They worked in groups to assess the quality of systematic reviews and interpret the evidence with the help of established guidelines (8). They were then asked to decide what action should be taken. Outlines of the conclusions drawn, the health care systems to which the results were applied, and the actions planned are given below.
Amodiaquine treatment of malaria

The review showed good evidence that amodiaquine was more effective in treatment than chloroquine, and there was no evidence of increased toxicity. Therefore amodiaquine was an option in uncomplicated falciparum malaria where chloroquine failed.

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Trichomoniasis treatment in women

The review showed that single-dose treatment with nitroimidazole compounds was as effective as other, longer treatments. The treatment of partners appeared important in diminishing reinfection.

Applied to
Women with symptomatic infections suggestive of trichomoniasis in primary care outpatient clinics. Illustrative countries: Brazil and Nicaragua. Currently, treatments vary in length, and although treatment of partners is recommended it is frequently not implemented.

Proposals
1. Increase the delivery of care as recommended in current guidelines.
2. Carry out additional research to evaluate the effectiveness of a variety of partner treatment programmes.

Implementation
1. Guidelines to be disseminated in a number of ways throughout the countries, and local workshops to be convened to encourage implementation of guideline recommendations.
2. Randomized controlled trials to be designed to evaluate the effectiveness of different methods of implementing programmes for the treatment of partners.

Balanced protein/energy supplementation in pregnancy

There was little evidence that food supplementation had long-term substantive benefit on mothers or babies. The effectiveness of routine food supplementation programmes during pregnancy, except...
in refugee situations, is therefore questionable.

**Applied to**
Large-scale supplementary feeding programmes for pregnant women in Latin America. Illustrative countries: Brazil and Guatemala. Questions raised as to whether this is the best use of scarce resources. However, for historical and political reasons these programmes may not be easily discontinued.

**Proposals**
Continue current programmes but do not expand them, and transfer their administration to community groups.

Or: discontinue current programmes over a pre-defined period and use the funds released to support salaries and incentives for workers in other programmes that have proved effective.

**Implementation**
The group was divided about which was the best strategy to follow. The feeding programmes had important political implications. It was not clear how to manage these and support the release of resources for use elsewhere. The resolution of these matters lay outside the health sector.

**Routine iron supplementation in pregnancy**
There was no evidence that routine iron supplementation during pregnancy yielded substantive improvements in neonatal or maternal outcomes. However, there were few studies of populations in developing countries, where comparatively low haemoglobin values were relatively common.

**Applied to**
Pregnant women attending government antenatal clinics in malarious areas of Africa. Illustrative countries: Ghana and Kenya. Two alternative strategies were proposed:

a) implementing a policy of screening all pregnant women for anaemia and treating cases so found;

b) continuing with routine prophylaxis until further research shows it to be ineffective in populations with high levels of anaemia.

**Implementation**
One country had already introduced targeted treatment to reduce user fees. Careful design of algorithms is required to detect and manage anaemia in pregnancy, and audit is necessary in order to improve the prospects for implementation.

**Using the evidence for decision-making**
Where research evidence was not strong, individuals dealt with uncertainty in different ways. Some managers wanted to

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stop interventions where there was no proof that they were beneficial, while others wanted to leave such interventions in place if no harm was demonstrated.

The interpretation of reliable research summaries is a step towards applying results in policy and practice. However, reviews may indicate uncertainty, making interpretation difficult. Furthermore,
certain factors may inhibit change, among them its magnitude, the services provided, and the beliefs of key decision-makers or respected clinicians. External political pressures also affect policy development and the delivery of care.

There may be resistance to change at the level of either policy or implementation. Action should start with the health workers responsible for providing care. If they are convinced that a particular treatment is the only correct one they may find it difficult to adopt another. Moreover, they may be under pressure from patients to continue delivering previously accepted regimes. Managers may be hesitant to change policies because they fear accusations of inconsistency or lack of knowledge.

Evidence-based practices that are contrary to internal and external political agreements increase the difficulty in implementing change. For example, there is a political benefit for countries that make donations of food and for recipient governments that distribute it. If evidence emerges that such programmes are of no benefit, strong resistance to change is likely, and governments can be expected to argue that there are positive outcomes.

Great strides have been made in the standardization of methods for conducting systematic reviews of the effectiveness of health interventions. High-quality reviews are available in fields important to persons concerned with policy-making and implementation, who should be assisted to acquire the skills needed for assessing the results of research, adjusting country policies and bringing about changes in health programmes.

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