their "in house" volunteer studies do so because they consider that such protocols should be reviewed by an external, independent committee and not an "in house" ethics committee. We fully endorse such a policy.

All this should in no way belittle review by local ethics committees, which in most cases is satisfactory. In some countries, however, local committees are not yet widely established and even when they are found there may be considerable variation in their experience, workload, and procedure.[4 5] In addition, in particular circumstances (such as multicentre studies or protocols of an unusual or specialist design) the range of representation and skill that the European Ethical Review Committee can call on is especially appropriate.

We believe that our experience is relevant to ethics committees in Britain. Present opinions about human experimentation are likely to increase the requirements for regulation. In many institutions in Britain, particularly in teaching centres, ethics review committees work well; but research is also conducted in district hospitals, which may not have the resources to construct a committee of the requisite experience. We propose that the solution to the problem of ethics review in smaller institutions lies in the regional health authorities accepting an overall responsibility for ethics review for their own hospitals and institutions. The range of resources within a health region would be ample to provide the skill required. The activities of the European Ethical Review Committee are relevant because its composition and mode of working are relevant to the type of ethics committee regional health authorities might establish—that is, a bureau of permanent members supplemented by a panel of experts drawn from an agreed range of medical disciplines and including nursing, legal, and lay members.

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Appropriate Technology

Principles of health education

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Health education is an essential component of any programme to improve the health of a community, and it has a major role in promoting:

(*a*) good health practices; for example, sanitation, clean drinking water, good hygiene, breast feeding, infant weaning, and oral rehydration;

(*b*) the use of preventive services—for example, immunisation, screening, antenatal and child health clinics;

(*c*) the correct use of medications and the pursuit of rehabilitation regimens—for example for tuberculosis and leprosy respectively;

(*d*) the recognition of early symptoms of disease and promoting early referral;

(*e*) community support for primary health care and government control measures.

Despite the potential benefits of health education, existing schemes are often inadequate and ineffective. In this article I review a range of experiences in the developing world to identify the ingredients for effective and appropriate health education. The key decisions that form the basis for any planning are decisions over *what* the desired change should be, *where* the health education should take place, *who* should carry it out, and *how* it should be done.

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What to change

The first step in planning any health education is to decide what the key problems are and what advice should be given. Well meaning attempts to introduce new practices may fail if they are incompatible with local beliefs and practices.[1] Changes advocated by health educators who are based centrally may be unrealistic locally, so a comprehensive strategy of health education both locally and nationally is necessary. Any proposal for a change of practice should:

(*a*) be simple to put into practice with the existing knowledge and skills in the community;

(*b*) fit in with existing life style and culture and not conflict with local beliefs;

(*c*) not require resources of money, materials, and time that are not available locally;

(*d*) meet a felt need of the community;

(*e*) be seen by the people to convey real benefits in the short term, not in the distant future.

To achieve success, health education programmes need to be flexible and modify their advice to fit in with people's circumstances—for example, education about nutrition should be based on foods that are available locally, aids for the disabled made from local materials, latrines built with traditional methods. Local taboos are rarely obstacles to implementing health education; indeed, many traditional beliefs are sound and may actually support the health education programme.[3]

If the change that you wish to promote cannot be modified easily to fit in with the local community, it will be hard to

promote it. It may be wise to start with a simple change that does fit in and meets an immediate need, and once that has been accomplished—and the benefits are apparent—the good will and trust generated may help in achieving a more difficult objective. Health education depends on continuous dialogue with the community to find acceptable solutions to meet their needs.

Where should health education take place?

A starting point for improving health education is a careful study of existing clinics, health centres, outpatient departments, and hospitals, but every encounter between a health worker and the community is an opportunity and health workers need to allot sufficient time for this (fig 1). They must also be encouraged to make full use of the surroundings and waiting areas for displays and demonstrations. Quiet areas where talks and small group discussions can be held are valuable, and it is important to remember that the most powerful way to implement change is to show that the staff themselves practise the preventive measures that they are recommending to the community.

FIG 1—Health education should be taken out into the community: a health care worker contacting a pregnant woman at home as part of a rural health programme in Tamil Nadu, South India.

Home visits and follow up are essential parts of any community based health education project, so the workload and schedules of duty of health workers need to be organised to allow them sufficient time for these activities. Opportunities for health education may be provided in those places where people come together—for example, in shops, market places,[4] community centres, churches, and so on. Health workers may also join forces with others to set up groups—for example, mothers' clubs, youth groups and preschool crèches. Such groups fulfil a social need as well as providing opportunities for health education. Schools provide an opportunity to reach the pupils and their parents. The child to child programme is an example of how primary school children may take part in community based health education programmes such as the control of malaria and chlorination of wells.[5 6]

Who should do health education?

All health workers have a role in health education, and even if doctors and medical assistants have a large burden of clinical work they should regard patient education as an essential role (fig 2).[7] Since they are likely to be in overall charge of health centres and hospitals, they should take a lead in health education and in encouraging their staff—nursing, paramedical, and ancillary workers—to promote local health care and preventive policies. In most Third World countries there are too few trained health care workers but help may be enlisted from those who are already giving advice to the community—for example, public health workers, agricultural and community development officers, youth workers, home economists, adult literacy workers, and teachers. Such workers must, of course, be kept fully informed of health education programmes and given basic training on key health issues.

Village elders, religious leaders, traditional healers, and birth attendants often have considerable influence on their local community. The advice that they give may not, however, be correct and may contradict the policies advocated by the health workers. Then the health worker must seek out the leaders in the community and try to obtain their support. If this is gained they may be given a basic training under the supervision of the health centre and become the first tier of a primary health care service.[8]

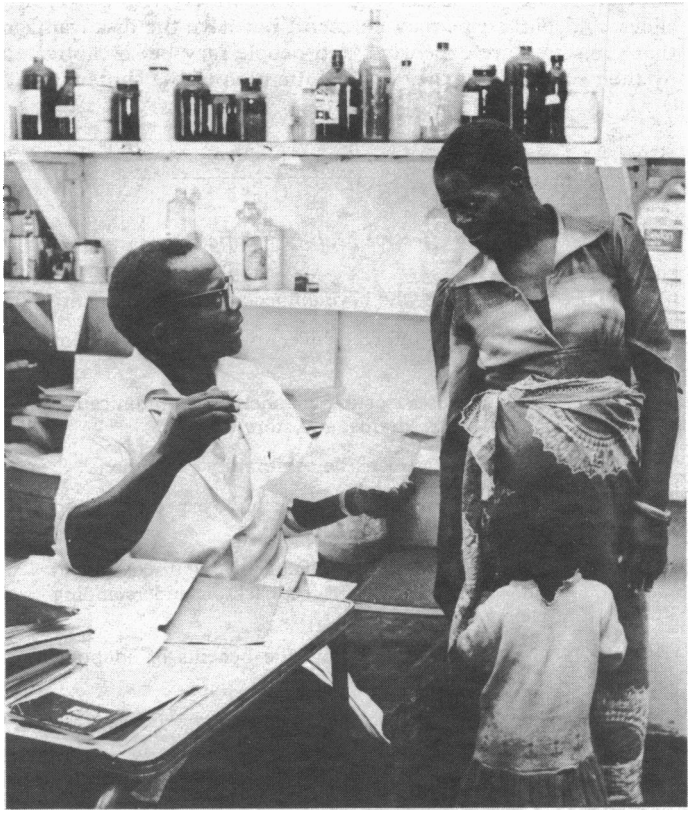

FIG 2—Every health worker is a health educator: medical assistant at Zambian rural health centre advising mother with child.

How should health education be carried out?

Some of the characteristics of effective health education approaches are summarised in the box. A most useful method is to provide demonstrations where the advantages of adopting the recommended practices are clearly shown and the techniques and skills concerned may be practised. Such demonstrations will be helped if "satisfied users"—for example, successful users

of oral rehydration, family planning, and breast feeding, as well as patients who have recovered from diseases such as leprosy—take part. All items used in demonstrations must be cheap and available locally; otherwise people will dismiss them as irrelevant to their situation.

Word of mouth is perhaps the most valuable way to influence actions. Oral traditions in many rural societies are strong and people enjoy communication conveyed by means such as puppets, drama, story telling, and music. Wilson reports the use of parables and story telling to promote health education policies in Nigeria.[9] Songs and painted wall murals have been used in nutrition education in Uganda.[10] The traditional Caribbean calypso song has been used to promote family planning and oral rehydration solutions. Drama is emerging as one of the best ways of communicating both with urban and rural communities.[11] Using these folk media and drama may entail teaching the health worker new skills, and various manuals and teaching slide sets are available.[12-14] Local actors and musicians may themselves be prepared to use their skills to put over the message.

Finally, one to one education, small group discussion, and community meetings may provide opportunities for questions and discussion. Their effectiveness may be increased by using learning aids such as leaflets, charts, posters, flash cards, flip charts, and flannelgraphs. Pictures need to be simple because many people will be unfamiliar with stylised Western pictures or biological diagrams.[15] It is a good idea to try out any leaflet or poster on members of the community to make sure they understand before circulating it more widely (fig 3). Films, slides, and film strips may be useful but have the disadvantage that projectors are expensive, and people may be so captivated by their novelty that they pay no attention to the content.

Characteristics of effective health education

- Directed at people who have influence in the community
- Repeated and reinforced over time using different methods
- Adaptable, and uses existing channels of communication —for example, songs, drama, and story telling
- Entertaining and attracts the community's attention
- Uses clear simple language with local expressions and emphasises short term benefits of action
- Provides opportunities for dialogue and discussion to allow learner participation and feedback on understanding and implementation
- Uses demonstrations to show the benefits of adopting practices.

The best way to use audiovisual aids is to draw people's attention and hold their interest while the health educator explains the important points. Leaflets are also useful, if the community is literate, to help people to remember the main points. The audience needs actively to take part in any discussion or demonstration and the educator can encourage this by asking questions and inviting comment. Flannelgraphs and a recent innovation of magnetised pictures on magnet boards are particularly good for encouraging participation.[17] Radio programmes are another good way to put over simple information related to large populations. Health information specific to the local community may be recorded on cassettes and played to small groups.[16] Details of many processes for producing simple low cost materials are reviewed in two excellent handbooks by Werner and Saunders.[12 18]

FIG 3—Audiovisual aids must be tried out to ensure that they are understood: health worker using flash cards in Tamil Nadu, South India.

Leeds Polytechnic offers a specialist one year diploma course in health education in developing countries. Details of the course may be obtained from Dr J Hubley, Leeds Polytechnic, Calverley Street, Leeds LS1 3HE (tel 0532 462786).

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Sources of information and audiovisual aids

Non-formal Education Information Centre, Michigan State University, East Lansing, Michigan 48824, USA.

TALC, Teaching Aids at Low Cost, Box 49, St Albans AL1 4AX, UK.

The Hesperian Foundation, PO Box 1692, Palo Alto, California 94302, USA.

Recommended reading

HYGIE (formerly *Int J Health Education*), 9 Rue Newton F-75116 Paris, France.

Education for Health. WHO, Avenue Appia, 1211 Geneva 27, Switzerland.

International Quarterly of Community Health Education. Baywood Publ Co, 120 Marine Street, PO Box D, Farmingdale NY 11735, USA.