skills will be applied in an increasingly sophisti-
cated way to solve everyday clinical problems. The
skills learnt will include critical appraisal, self
directed learning, and group working; the basic
text theory and applications of epidemiology and bio-
statistics.

As our medical school revises the later years of
the undergraduate curriculum we look to our
clinical colleagues to put the principles of evidence
based medicine into practice so that we train a new
generation of doctors who will be practising more
of the science, as well as the art, of medicine and
who will contribute to the knowledge based health
service that Smith envisages.

KEVIN PERRETT
Senior registrar
PAUL SILCROS
Senior lecturer
ROBERT A DIXON
Senior lecturer
JAMES MUNRO
Lecturer

Department of Public Health Medicine,
University of Sheffield Medical School,
Sheffield S10 2RX

2 Evidence Based Medicine Working Group. Evidence based medicine—a new approach to teaching the practice of
medicine. JAMA 1992;268:2420-5.

Methods of assessing medical treatments

EDITOR,—We agree with Trevor A Sheldon that randomised clinical trials are one of the most
important methods of assessing the merit of
medical treatments.1 We question, however,
whether they can, by themselves, address success-
fully two critical challenges that Sheldon identifies:
“to provide answers to more clinically relevant
questions” and “to get the results of research into
practice.”

Quality of care is the extent to which health care
is able to achieve those health benefits that science
and technology make possible,2 or the gap between
efficacy—the probability of benefits under ideal
conditions—and effectiveness.3 Whether drugs or
techniques of proved efficacy are used effectively
depends largely on factors related to the clinical
setting and the clinician’s practice. Additionally,
achieving desired health outcomes often requires
the active participation of the patient.4 Research
focusing on efficacy seeks to exclude such factors,
either by clinical analysis. Clinically relevant
questions also include how effects will be
modified, and by how much, in relation to the
clinical setting, the clinician’s practice, and the
patient’s behaviour. It may, however, be difficult
to identify and yet realistic combinations of these
factors to the comparison groups in a
randomised clinical trial, whatever its size.

Randomised clinical trials are also unlikely to
provide answers to questions about how experimental
results produced in a controlled environment translate into medical practice. Health services researchers
need to examine carefully the assumptions
and simplifications built into experimental
studies, whether in the design of the research, the
definition and measurement of key variables, or
the analyses performed. Clinicians need to
appraise the validity of the results produced by
clinical trials in specific practice environments and
to recognise their limitations. Once a consensus
has been reached the diffusion of medical guide-
lines should be, in itself, the focus of rigorous and
useful research.5

Increased reliance on valid data published in the
medical literature has brought considerable
improvements in the practice of medicine over the
past decades.6 While randomised clinical trials are
a vital component of this literature and should
continue to be improved—for example, to incor-
porate more measures of the patients’ values—they
cannot provide scientifically valid answers to all
the questions raised in the search for high quality
care. Attempts to develop sound and robust obser-
vation-based and quasiexperimental research designs
should be scrutinised and criticised constructively,
not snubbed.

ALAIN FONTAINE
Staff physician
Unité d’Evaluation,
Hôpital Louis Mourier,
Fauchet X Richet,
Paris, France

PIERRE DURIEUX
Head of department
Délégation à l’Evaluation,
Direction de la Perspective et de l’Information Médicale,
Assistance Publique,
Hôpitaux de Paris,
Paris, France

1 Sheldon TA. Please bypass the PORT. BMJ 1994;309:142-3. (17 July.)
3 Brook RH, Lohr KN. Efficacy, effectiveness, variations and quality: boundary-crossing research. Med Care 1985;23:
710-22.
1993;342:1317-22.
5 Evidence-Based Medicine Working Group. Evidence-based medicine; a new approach to teaching the practice of medicine.
JAMA 1992;268:2420-5.

Conducting clinical research in the new NHS

EDITOR,—J F Smyth and colleagues outlined the
problems in obtaining funding for clinical trials
since the advent of the purchaser-provider split.7
The crux of the paper was that hospitals can no
longer afford to conduct clinical trials as they
cannot be assured that the real cost of undertaking
trials will be recouped from purchasers.

It might be helpful to examine this from a
purchaser’s perspective. Stockport Health Com-
misson has recently been faced with the choice of
funding a clinical trial over and above its contract
with a local cancer centre. The potential benefits
for the population of Stockport of patients in
Stockport entering the clinical trial can be esti-
mated. Over four years three patients would enjoy
an increased survival of three years or more for
an investment by the commission of just under
£30000. For these three patients to enjoy this
survival, however, 30 patients would have to
undergo chemotherapy for six months. For a
similar investment Stockport Health Commission
could treat every patient in Stockport with severe
venous ulceration of the leg effectively; this would
benefit 300 patients. Both age groups would be
similar. Treatment of leg ulcers can improve mobility
and enhance the quality of life, although
there is mild discomfort because of the application
of bandages.

Cancer research is emotive. If the public was
asked what its priority would be it would probably
say cancer research. What choice should the
purchaser make? The purchaser has to choose
between funding an unproved intervention or a
proved intervention. If research is to be funded
from purchasers’ allocations it will always have to
compete with general service developments, most
of which, I hope, are proved in their effectiveness.
Clearly, it is important that cancer research
progresses, and I agree with Smyth and colleagues
that a mechanism needs to be found whereby the
service costs of research can be met from top slicing
funds from the NHS. Then each trial may be fully
funded at its inception.

Research must recognise, however, that the
number of clinical trials that can be legitimately
funded in any year is limited. Purchasers recognise
the importance of this research, but we do not want
to reach a situation where headlines, instead
of reading “cancer research stifled by NHS
reforms,” read “cancer research stifles proved
effective treatments.”

BOURJ
Consultant in public health
Stockport Health Commission,
Stockport SK7 5BY

1 Smyth JF, Mossman J, Hall R, Hepburn S, Pinkerton R, Richards M, et al. on behalf of the United Kingdom Coordin-
1994;309:457-61. (13 August.)

Thalidomide may not be a mutagen

EDITOR,—I wish to comment on W G McBride’s
report of two children with malformations whose
fathers are thalidomide victims.8 In case 1 the
father is described as having no thumb on the right
hand while the child has no thumb and only two
digits on both hands. As far as I can tell from the
photographs, however, the child’s malformations
seem to be the result of split hands, while the
father’s malformations seem to be something other
than a radial ray defect. I believe that both the
father and the child have split hand deformity
(McKusick defect), which is autosomal dominant.
Alternatively, the father’s malformations could be
part of a construction band syndrome (an amniotic
band, with amputation of the thumb), which is
tothearadialraydefects
thalidomideembryopathyinparticular)inboth
the father and daughter. These may be due to the
Holt-Oram syndrome.

If the agent is assumed to be a mutagen it would
have affected the germ cells of the fetus when each
father’s mother used it. Since mutagens do not
have specificity at the affected site the children
would be unlikely to have the same symptoms.

MITSUSHIRO KIDA
Takayama University School of Medicine,
11-1 Kaga 2-chome,
Inaba-shi-ku
Takayama 173,
Japan

1 McBride WG. Thalidomide may be a mutagen. BMJ 1994;309:1635-6. (18 June.)

Education and training for general practice

Royal college lacks necessary mandate

EDITOR,—Jamie Bahrami gives a predictable view
of education and vocational training in general
practice.1 A recent paper from the National Asso-
ciation of Health Authorities and Trusts2 and Gen-
eral Practitioner Committee of the Royal College
of General Practitioners,3 to which his editorial alludes, are other recent contrib-
utions. Now that we have heard from NHS
managers and “academic” general practitioners, I
seek to give a view from those on whom change
will be visited.

Bahrami casts doubt on the future of the Joint
Committee on Postgraduate Training for General
Practice, supports the recommendation for
increased fiscal power for regional advisors, and
welcomes the bid by the Royal College of General
Practitioners for untramelled power in matters of
education. Within the joint committee, repre-
sentatives from the General Medical Services
Committee realise that the status quo is untenable
and that the world of education must develop;

BMJ VOLUME 309 17 SEPTEMBER 1994 741