Editorial

Risk

In this issue of the Journal Sir Edward Pochin urges the development of quantitative techniques for evaluating the risks and benefits of medical procedures. Acknowledging the difficulties he argues that they must nonetheless be overcome; for 'it must be ethically insecure to propose or to use a procedure without some assessment, however approximate, of the hazards involved and whether they are clearly offset by the likelihood of benefit'.

While many are at pains to deny that assessment of the consequences of actions can provide a sufficient basis for any ethical theory (and hence for any medical ethical theory), few would deny that such assessments are a necessary part of any ethical theory – even Kant, that arch anti-consequentialist, uses consequentialist arguments to justify his fanatically anticonsequentialist deontology. Certainly in medical ethical decision-making the assessment of the consequences, good and bad, of proposed actions is almost universally regarded as being essential; and indeed for some doctors it is their only acknowledged medico-moral guide.

Clearly the concept of risk is an integral part of consequentialist thinking, relating as it does to the adverse consequences of actions. Indeed, since cost-benefit analysis, one of the main tools of medical ethical consequentialism, largely applies to predicted events whose costs and benefits are probabilistic, most medical cost-benefit analysis is in fact risk-benefit analysis.

One of the messages that emerges so clearly from Sir Edward’s elegant discussion is the enormous complexity of risk assessment, a complexity which starts but by no means ends with the ambiguity of the term. At least three distinct components are distinguishable within the concept of risk but they are usually conflated in ordinary talk about risk. The first is the nature of the harm concerned, the second is the probability that it will occur, and the third is the degree or quantity of harm which it will produce if it does occur. In the context of gambling these three components might be represented by the harm of losing money (as distinct from counters or clothing for instance); the probability of doing so (good poker players are often remarkably knowledgable about the statistical probabilities of relevant card combinations occurring at any given stage of play), and the degree of harm which losing different amounts of money will produce. Even in the gambling context, where the actual monetary loss may be objectively quantified, the harm produced will vary not only with the affected individual’s circumstances (the medical student whose grant has run out will be more harmed by the loss of ten pounds than will the doctor with whom he is gambling) but also with his personality (one will find such a loss an anguishing humiliation, another will shrug it off).

Distinguishing these three components of risk in the context of medical practice can be helpful. For example, taking the contraceptive pill is, thanks to wide media coverage, known to be a risky business. If such risk talk is restricted to the nature of the harms concerned the discussion becomes fairly gruesome; apart from killing people the Pill may cause paralysis from subarachnoid haemorrhage, lung disease from pulmonary embolus, a form of diabetes, liver damage, depression, loss of libido, weight gain, breast discomfort, irregular vaginal bleeding... It is a brave, or phlegmatic, or unusually knowledgable patient who is prepared to take the Pill after reading the list of adverse side-effects which manufacturers are obliged to prepare about each of their prescription products – a list which understandably is usually printed as inconspicuously and inaccessibly as possible.

Surely the manufacturers would do themselves, as well as the doctors who prescribe their drugs and the patients who take them, a great service if they provided some measure of the probability of each of these side-effects occurring. For example, the young woman who is told by her doctor that there is a risk of dying as a result of using the Pill often finds it very reassuring to know that in any one year of Pill-use the probability of dying from it is about one in 20,000 (1) (a figure which seems to be more accessible than the more usual '5 per 100,000' let alone '5 x 10^-5'). Doubtless doctors would be more prepared to discuss risks with their patients if they had more information of this sort on which to base such discussion. Certainly existing lists of 'rare' or 'occasional' adverse side-effects are not sufficient.

It is the third component of the concept of risk, assessment of the degree or amount of harm anticipated, which provides the greatest complexity. Objective measurements are certainly never sufficient for such assessments; the quantity of breast tissue to be
lost in a mastectomy cannot provide an adequate measure of the harm to be anticipated from the loss of
that breast or part of breast – the area of baldness to be
expected from radiotherapy or chemotheraphy cannot
provide an adequate assessment of the harm such bald-
ness may produce. The problem is that people vary so
widely in their perception of harm and thus in their
perception of risk. Only part of that variability is
caused by inadequate information about the relatively
objective ‘facts of the matter’, most is caused by per-
sonal and cultural variation – indeed Charles Fried (2)
suggests that one of the determinants of personality is
the risks a person is prepared to accept in the pursuit of
his ‘life plan’. Such variation makes interpersonal
agreement difficult enough when even a single harm is
being quantified; when this is attempted in the context
of weighing up several different types of harm and then
balancing them against several different types of
benefit the problems begin to appear insuperable.

Two different approaches to resolving this problem
may be relevant in the context of medical ethics. The
first is to pursue the theme of respect for personal
autonomy, accept that people do vary in their evalua-
tion of harms and benefits and their assessments and
perceptions of risks and encourage them to make their
own decisions. After all whether or not harms and
benefits are incommensurable people behave as though
they are not and constantly make decisions in which
somehow they are weighed up against each other.

Even if this course is followed however it remains
true that people wanting to make their own auton-
nomous choices prefer to do so on the basis of the best
available relevant information: in this context the best
available information about the risks and benefits of
different therapeutic or other medical options is
required. Furthermore it is useful to put such informa-
tion into the context of similar information about the
harm and benefits commonly accepted in ordinary
life: in his article Sir Edward points the way with some
charts showing mortality rates in various occupations
and activities. For example, it may help the young
woman contemplating the risks of dying from the Pill
to know that these are similar to the risks of dying from
a traffic accident (1).

Not all patients, however, do want to make such
decisions themselves; many prefer (quite autonom-
ously) medical risk-benefit assessments to be made on
their behalf by their doctors. Moreover in other medi-
cal contexts, such as medical research and the alloca-
tion of resources within medicine, doctors are obliged
to make their own assessments of the risks and benefits
of alternative courses of action, taking into account not
the preferences of a single patient but of patients in
general. In such contexts it is important to base
assessments of such preferences not on personal opin-
ions or preferences but on appropriate sociological,
psychological and economic data. Each of these disci-
plines has developed sophisticated techniques for
obtaining such data and a study reported by Kerry
Thomas in an excellent Royal Society symposium on
risk assessment and perception (3) suggests that the
public are quite sophisticated in differentiating dimen-
sions of risk and benefit. There seems no reason to
exclude the possibility that groups of patients would be
similarly sophisticated. Finally the use of techniques
such as the ‘Nottingham Health Profile’ (4) go some
way towards facilitating the recording of perceived ill
health in a standard and quantified way.

It is clear that techniques of risk assessment are
rapidly developing into a separate discipline in which a
few medical enthusiasts are already participating. Cer-
tainly it is a discipline which medicine needs to take
seriously for one way or another better assessment of
the risks and benefits of its interventions is undoubt-
edly necessary.

References

(1) Anonymous. Mortality associated with the Pill.
(2) Fried C. An anatomy of values. Cambridge, Mass: Har-
(3) The Royal Society. The assessment and perception of risk.
(4) Hunt S M, McEwan J, McKenna S P, Backett E M,
Pope C. Subjective health of patients with peripheral