How general practitioners assess risks in using new drugs

P. M. WILLIAMSON
Department of Management Studies, Liverpool Polytechnic

SUMMARY. ' Situational ' risk is an important determinant in the adoption of new pharmaceuticals. Not specifically the scientific risk of using the drug, but rather the risk the doctor perceives through his previous experience, both with similar treatments and with factors associated with the innovation such as its sponsor and mode of action. With this information the doctor determines to what degree further validation is required in order to allay any fears. The extent and complexity of this additional reassurance will thus determine how long is required before adoption and to what extent additional sources of information should be consulted.

Introduction

This paper considers the ways in which a group of general practitioners evaluate risks in the use of new drugs and how they subsequently judge whether these risks appear justified, and decide to use the products. These data summarise part of a larger study undertaken during the past three years into the patterns of adoption of new drugs among general practitioners in the Merseyside area. During this study 140 doctors allowed a lengthy personal interview in which they provided information about their prescribing and communication habits.

The nature of risk

It is well established (Bauer, 1960) that the decision to which there are two or more solutions represents a situation of risk—risk that the correct strategy may not be chosen, which will prevent the best use of resources.

Cunningham (1964), among others, measures risk in terms of two variables; that due to the uncertainty or ' indeterminancy ' of the problem and that associated with the consequences of making a wrong decision. As total risk is postulated as a function of these two variables, total change may be obtained by variation of either the uncertainty or the consequences component. As uncertainty is clearly related to the knowledge an individual possesses about a situation, risk reduction has tended to become associated with information handling and decreasing ' indeterminancy '.

Common knowledge and a number of empirical studies (Bruner and Tajfel, 1961) suggest that each individual possesses a unique propensity to accept or avoid the risks involved in adoption. This would suggest that risk is not merely a function of the ' situation ', but equally a function of the ' individual '—the perceptions he has developed from his previous experience.

This study considers the situational rather than personal component of risk; focusing on those factors in the adoption of new drugs which lead to a more-or-less ' risky ' choice. In addition I examined how the consequence is managed in terms of information handling.

The doctor's problem

The doctor, and particularly the general practitioner, is continuously presented with situations in which risk is present. He is required daily to make decisions about diagnosis and treatment in which there will normally be uncertainty and which often promise devastating consequences should a wrong decision be made.

Set in this context the decision as to whether or not to adopt a new drug is of relatively minor importance and low risk.

One might assume that with the inherent degree of uncertainty a doctor's ' professional ' course of action would be hesitancy in adopting, in order to ' avoid trouble.' However, a new drug may offer the doctor a chance to treat a group of his patients more effectively than he has had the opportunity of doing before; while being a professional man he may well take pride in

TABLE 1

TABLE OF DRUGS/DIAGNOSES WHERE RESPONDENTS WERE INCREASINGLY LIKELY/UNLIKELY TO ADOPT A NEW DRUG ON THE BASIS OF COMMERCIAL INFORMATION

Question: " Would you adopt a new drug in this therapeutic area after having heard about it solely from a commercially sponsored source? "

	Number of mentions	
	Would adopt	*Would not adopt*
Low risk		
Expectorants, linctuses, antitussives	60	—
antacids, laxatives, anti-diarrhoeals	40	—
dermatoses, topical skin infections	31	—
mild analgesics (aspirin based).	20	—
Medium risk		
Antihistamines	8	—
Vitamin supplements	5	1
Vaccines (as a general group)	3	1
Sulphonamides/penicillin	2	1
Potent analgesics	2	4
Anti-asthmatics	1	5
Sedatives/hypnotics	—	3
Bronchodilators	—	8
Broad-spectrum antibiotics	—	10
Oral contraceptives	—	13
Arthritics/anti-rheumatics	—	13
High risk		
Diuretics	—	12
Anti-obesity drugs	—	17
Less potent psychiatric drugs	—	24
Hypotensive agents	—	26
Cardiac drugs	—	25
L. dopa	—	39
Anticoagulants	—	32
Hypoglycaemics	—	38
Beta blockers	—	43
Potent-psychiatric drugs	—	55
Cytotoxic drugs	—	64
Total number of mentions from 140 interviews	172	443

wanting to be up to date. With his established therapies the doctor has reached an equilibrium of mastering uncertainties and minimising risk.

With the new therapy, the process of reaching this point must begin again, although the final outcome may be more favourable. The doctor is required to learn a whole new series of responses, side-effects, and doses. In sum he must decide whether to increase uncertainty in the short term on the chance that it will decrease in the long term, and in the hope that he will benefit personally by discharging his duties in a more efficient way and his patients benefit through more effective treatment.

The evaluation process the doctor undertakes takes place against a background of continuous, often strident, pharmaceutical promotion designed to assist the doctor in making a favourable decision. While the pharmaceutical industry has a legitimate and vital function to perform in providing the doctor with information about its products, it often appears to usurp the doctor's evaluative function and suggest adoption merely on the commercial evidence. This circumstance can only exist if the doctor is willing to abdicate his right for personal evaluation in favour of the sponsor's researches.

TABLE 2 (a)

FACTORS MENTIONED AS TENDING TO REDUCE RISK

	Number of mentions from 140 interviews
" Where product is modification of an existing drug "	30
" The absence of any adequate therapy "	18
" British manufacturer "	8
" Easily understood mode of action "	8
" Research tradition by innovating company "	7
" Personal knowledge of clinical trial "	5
" U.K. published trial data "	3
Other reasons	4

TABLE 2 (b)

FACTORS MENTIONED AS TENDING TO INCREASE RISK

	Number of mentions from 140 interviews
" Existence of adequate therapies "	17
" Unknown or totally new mode of action "	11
" Foreign and/or unestablished producer "	10
" Foreign and/or unpublished clinical trials "	9
" Pregnancy in potential patient "	5
" Innovation unrelated to current therapies "	3
" Low incidence of disease "	2
Other reasons	3

It seems that under certain conditions, such as where the adoption represents little risk, that the doctor is often willing to relinquish his personal evaluation and prescribe on the information provided by the drug company. The degree to which a doctor is willing to adopt a drug on this basis of commercially-sponsored information may therefore be a useful measure in determining the differences in risk he perceives between various situations. It is the method used in this research to draw up a ' league table ' of riskiness (table 1).

Results

During the interview each respondent was asked two questions designed to uncover the limits of his or her risk acceptance. These questions asked for diagnoses or therapies in which the respondent would or would not normally prescribe an innovation after having heard about it solely from a commercially-sponsored source such as a pharmaceutical mailing, journal advertisement, or visit from a representative.

The responses to these two questions are collated in table 1. Clearly doctors found it considerably easier recalling those situations in which commercial information was not enough to effect adoption (443) as compared to those in which it appeared adequate (172). For the sake of convenience, while acknowledging the inaccuracies inherent in small samples, the data in table 1 were arbitrarily segmented into three zones termed high, medium, and low risk. This was done in order to find out whether the doctor translated his differing perceptions of risk into varying patterns of adoption and hence contrasting need for information.

It seemed obvious from the results obtained in a pilot survey that ' situational ' risk was not solely that represented by a diagnosis or therapy. Two extra questions therefore probed the existence and magnitude of any additional factors which might modify the fundamental risk. These additional modifying factors are summarised in tables 2 (a) and 2 (b). The ' situational ' aspect of risk, as distinct from the ' personal ' aspect, seems therefore to consist of at least two components—a fundamental level of risk which the diagnosis or therapy represents as this is subsequently modified by extraneous factors. These outside factors seem collectively

TABLE 3

SOURCES OF INFORMATION ABOUT THERAPEUTIC RISK FOR A RANGE OF SELF-SELECTED ADOPTIONS OF NEW DRUGS

	Therapeutic risk		
	High (*N*=45)	*Medium* (*N*=57)	*Low* (*N*=38)
Representatives	25	31	39
Mailings	14	17	19
Journals	19	8	9
Colleagues	12	14	8
Consultants	18	8	4
Other sources	12	22	21
Total number of sources used	125	154	89
Average number of sources used	2·77	2·70	2·34
Per cent professional sources used	*49*	*30*	*21*
Average time taken to adopt (weeks)*	74	51	49

*The time taken to adoption is the period between release onto the market and first use.

to be the ' voice of experience ' often acting over and above the doctor's rational evaluation. Given these outside forces any position in table 1 must be regarded as extremely fluid and subject to the combined effort of one or more pressures.

The management of differing levels of risk

As part of each interview the respondent was asked to retrace the stages which preceded a recent adoption. Subsequently each self-selected innovation mentioned was categorised as either high, medium, or low risk in accordance with the scale shown in table 1. Fortunately there was a fairly equal distribution between the risk categories.

From the data each respondent provided about his use of information before adoption and the time this required. It is clear (table 3) that the ' situational ' risk affects both the time taken to adopt and also the number and sources of information.

Table 3 shows clearly how both the numbers and percentage of ' professional ' sources used increases with therapeutic risk. The position of consultant and colleague influence is of particular interest; in low-risk situations neither is of great importance (12 per cent total use); in medium risk the general practitioner's peer influence tends to predominate (14 per cent) and suffice, while is high-risk conditions supervisor (consultant) influence is more often required (18 per cent) to allay risk. It is interesting that even in high-risk situations the doctor numerically receives more commercial rather that professional sources, although in terms of influence one professional mention may equal several commercial exhortations.

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