

**AGENCY, INFORMED DECISION-MAKING AND
CONTINUITY OF CARE: A QUALITATIVE
APPROACH IN GENERAL PRACTICE**

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ABSTRACT

Health economists have long considered Principal Agent Theory as a model of the doctor patient relationship (Evans 1984;Mooney 1994;Williams 1988). More recently there have been variants of the traditional agency model. In a paper by Gafni and colleagues (Gafni, Charles, & Whelan 1998) two versions of the agency relationship in health care are compared: the Physician as Perfect Agent (PPA) versus the Informed Treatment Decision-Making (ITDM) model. This paper offers a discussion of these models and the conclusions reached by Gafni et al, drawing on qualitative data collected as part of a study of the use of lumbar spine x-rays by GPs. Qualitative analysis of in-depth interviews with GPs suggested that there is a distinction made between types of information about the patient's utility function. The potential importance of differentiating between 'state' and 'trait' arguments in the patient utility function is discussed, and the appropriateness of the two versions of the agency model considered with possible implications for continuity of care policies.

INTRODUCTION

Agency theory is used in economics as a model for situations that are characterised by asymmetry of information. In the context of health care, this asymmetry is such that the patient has information about her utility function, and the doctor has specialist medical information. Recently there have been variants of the traditional agency model. In a paper by Gafni and colleagues (Gafni, Charles, & Whelan 1998) two versions of the agency relationship in health care are compared: the Physician as Perfect Agent (PPA) versus the Informed Treatment Decision-Making (ITDM) model. Although both fall within the tenets of agency theory, there are two fundamental differences between the PPA model and the ITDM model: the allocation of the decision-making role, and the transfer of information. These are interdependent since the adoption of the role of decision-maker by one party requires the transfer of information from the other.

The Physician as Perfect Agent

In the PPA model, the decision-maker is the 'perfect agent' who assimilates the two sets of information and identifies the utility-maximising option. Patient preferences are integrated into the decision, but decision-making remains the duty of the physician. Clearly, for this utility-maximising choice to occur, the patient must fully inform the doctor about her utility function. This description of the principal agent relationship in health care reflects the traditional, paternalistic values of the doctor-patient relationship (Charles, Gafni, & Whelan 1999; Emanuel & Emanuel 1992). Although this model has also been termed the "empowered physician option" (Rochaix 1998), the choice made is, in accordance with agency theory, the decision that the principal *would have* made given perfect information (Culyer 1989).

Informed Treatment Decision-Making

The ITDM model (termed the 'empowered patient option' (Rochaix 1998)) casts the patient as decision-maker. The decision remains the result of incorporating clinical information known to the doctor with the patient's utility function, but the requirement here is for the transfer of clinical information from the agent to the principal. The premises of ITDM seem, in this way, to be more compatible with shared and informed decision-making models which are discussed in much of the current literature (see for example (Charles, Gafni, & Whelan 1997; Charles, Gafni, & Whelan 1999; Gwyn & Elwyn 1999; Sculpher, Watt, & Gafni 1999)).

The challenge in the ITDM model is in the effective delivery and comprehension of frequently complex information about choices, treatments, prognoses and risk of adverse events. Gafni et al assert that this is a more feasible process than the transference of information regarding the patient utility function, and illustrate with evidence of the range of information aids available to improve the transfer of clinical information and the comparative scarcity of technology to elicit patient utility functions. Following this argument, they suggest that the decision will be closer to the optimal choice. The ITDM model is further preferred because of the implications for patient empowerment.

“Our conclusion is that transferring the information to the patient is easier (but not easy) and, hence, more feasible than transferring each patient’s preferences to the physician in each medical encounter. This is because the “technology” to measure patients’ preferences without making strong assumptions is much less developed” ... “It also has an added psychological advantage to the patient in that it is the patient who declares the treatment choice rather than the physician”

Williams (1988) also describes an agency relationship which casts the patient as informed decision-maker, whilst acknowledging that this may rarely happen

“... the principle that the doctor’s role is to give the patient all the information the patient needs in order to enable the patient to make a decision and the doctor should then implement the decision once the patient has made it.”
(Williams 1988)

However, there is evidence that patients’ preferences for decision-making are varied and studies have shown that many patients want information, but prefer not to be involved in decision-making (see for example (Ende *et al.* 1989; Vick & Scott 1998).

State and Trait

State versus trait is a distinction that has been often used in psychology to describe and measure different types of characteristics (Atkinson *et al.* 1995). In the study of personality, for example, tests have been developed to measure state versus trait anxiety and anger. Deeper understanding of the utility functions in the doctor patient relationship is needed (Mooney & Ryan 1993; Ryan 1994). There may be a similar distinction in the specification of doctors and patients’ utility functions that has not been fully explored. As illustrated by Mooney’s comment below there are central beliefs or personality traits that are likely to be important to, but not unique to health.

“an individual’s attitude to autonomy is likely to be a general personality trait and not unique to health care decision-making. This is likely to be true too of attitudes to information, to dignity” ((Mooney 1994) p96)

It seems plausible that some arguments in the patient’s utility function are more stable than others. Or indeed that patients have multiple utility functions, some of which are more stable and represent traits, and others which have more transient properties, which may be time dependent, or situation specific.

QUALITATIVE ANALYSIS

Background to the study

Low back pain is a very common problem and non-specific low back pain accounts for the vast majority of cases with only about 2% caused by systemic disease (Deyo & Bass 1991). Of GP consultations for low back pain, 13% result in a direct referral to a radiology department i.e. between 759,200 and 1,122,040 referrals each year

(Papageorgiou *et al.* 1993). At an estimated cost of £40 (based on local prices) this would result in a total cost of between £30.4 million and £44.9 million.

Lumbar spine x-rays also generate a health risk due to exposure to a high dose of ionising radiation (National Radiological Protection Board 1990). The effective dose from a lumbar spine radiograph is equivalent to approximately 65 chest x-rays, or 7 months of natural background radiation (Royal College of Radiologists 1998) and represents the highest dose of all plain film x-rays. The Royal College of Radiologists discourages use of spinal x-rays with the exception of a few clearly defined cases (Royal College of Radiologists 1998). Despite these and other guidelines (Waddell *et al.* 1996) there remain wide variations in the use of lumbar spine x-ray in general practice. In the Newcastle area, 2 years of data from the radiology department revealed a range from 0 to 53 requests for lumbar spine x-rays per year for an individual GP. When adjusted for list size and working hours, the range was approximately 0 to 29 x-ray requests per 1000 patients.

Preliminary discussions with GPs indicated that they were aware of the guidelines available, and felt the issue to be a complex one. They suggested that the psychological advantages of reassuring patients were great and that many patients want x-rays. A qualitative study (SPine Radiology IN General practice) was undertaken to investigate the reasons for GPs use of lumbar spine x-ray for patients with low back pain. In-depth interviews were conducted with GPs in north-east England. Thematic analysis of the GP interview data revealed an emphasis on the GP patient relationship, which formed a strong theme and secondary analysis was conducted on this aspect of the thematic framework for the purposes of this paper.

Aims

To explore the premises of the PPA and IDTM models by:

- 1) Examining whether GPs incorporate factors from patients' utility functions into treatment decisions, and what sorts of factors are considered.
- 2) Exploring the issues surrounding the transfer of clinical information from GP to patient.
- 3) To explore the hypothesis that GPs consider 'state' and 'trait' characteristics of the patient utility function differently.

Recruitment and Participants

Information about the number of x-rays requested by individual GPs was obtained from radiology departments. Absolute numbers of x-rays were adjusted to take account of working hours of GPs and list sizes. GPs were then sampled from the top and bottom of the list (according to the adjusted figures) and were categorised as 'high' or 'low' in order to obtain a range of views and to attempt to explain which features, if any, distinguished high and low users of lumbar spine x-ray. Of 55 GPs contacted, 29 took part (14 high, 15 low), in 3 areas of north-east England: Newcastle Upon Tyne, Gateshead, and Teesside.

Methods

In-depth qualitative interviews were conducted. Broad questioning was enhanced with probing and prompting techniques. Interviews were tape recorded and transcribed verbatim. Field notes were made verbally to tape after interviews and were also transcribed verbatim.

A 'Topic Guide' was developed in 4 main sections. The first section was concerned with background and contextual information, such as type of practice, facilities, area, and qualifications. Section 2 aimed to elicit information about GPs' perceptions of patients with low back pain. The third part of the interview was centred on specific cases of low back pain seen. Respondents were asked to retain the notes of recent patients to discuss their histories, consultations and decisions made. This approach aimed to probe more closely the reasons for decisions to x-ray and reasons for choosing other courses of action. In the final section, GPs were asked specifically about their beliefs and attitude to lumbar spine x-rays.

The topic guide is intended only to guide the interviewer and the order of interviews varied depending on spontaneous discussion and the emphasis accorded to topics by respondents.

Analysis

Methods of qualitative data analysis were based on the principles of constant comparison. Themes were generated from the interview data and contradictory cases were identified wherever possible. From the emergent themes, the categorisation of higher level themes and sub-themes was based on either the prevalence of the view among those interviewed and/or the importance attributed to the view by the GPs. The stages of analysis in this process were broadly those described in the '*five key stages*' of the 'Framework' model of the stages of qualitative analysis.

The use of qualitative computer software (N VIVO) enabled flexible and effective indexing of the interview data.

RESULTS

There were two central findings from the main study that related to the differential use of x-rays between the high and low groups described above. The first was that GPs were generally aware that guidelines do not recommend use of lumbar spine x-rays for patients with non-specific low back pain and these guidelines were largely unchallenged by GPs in both groups. Knowledge of or agreement with guidelines did not appear to be a driving factor. The second observation was a distinction between the two groups relating to their concern about of the risk of radiation in this type of investigation. GPs in the high group were less likely to have concerns about exposure to medical radiation in plain film x-rays:

"I can't say I'm convinced that there is ... good evidence that patients are actually coming to harm by having x-rays" ... "having worked with a lot of people in the operating theatres where x-rays are being sprayed around and I'm not aware of any of them coming to major harm, okay we used to wear lead most of the time but not all the time" GP24, high

“I am very anti X-ray. I see that X-ray has a dose of radiation associated and with back X-rays gives out a significant amount of radiation and really I think a lot of people, particularly in casualty departments and GPs don't take that into account and it's really important.” GP06, low

the roles of GPs and patients

The results presented here are extracted from another emergent theme, which was ‘the roles of GPs and patients’. Respondents discussed the behaviour of the two parties and how they interacted, as well as the factors which they felt influenced the medical decisions, in this case to do with the management of low back pain. It was from this area of analysis that different types of information about patients’ utility functions was observed which was subsequently labelled ‘state’ and ‘trait’ information.

Specific preferences for health states, or treatments (as described by the GPs interviewed) were termed ‘states’ and distinguished from more broad, stable preferences or ‘traits’. Traits were those preferences referred to in terms of the accumulation of information about patients and their preferences over time. GPs interviewed frequently used language such as ‘knowledge’ of the patient to describe the elicitation of such information.

Interview data relating to the GP-patient roles were categorised into the sub-themes shown in the table below.

the roles of GPs and patients	
the transfer of information	* Eliciting/ incorporating patients’ views (<i>state</i>) * GP’s knowledge of patient (<i>trait</i>) explanation acceptance of explanation
the decision-making process	the consultation * patient pressure negotiation reassurance
the preservation of the relationship	trust/ confidence collusion pleasing the patient appearing to be a good doctor maintaining relationship

For the purposes of this discussion, there were thematic areas of particular relevance, and these have been indicated * above.

‘Eliciting/ incorporating patients’ views’

This theme constitutes GPs’ accounts both of the integration of patient preferences into treatment decisions and of situations of patient pressure. These two situations are quite different in nature. The first implied features of the PPA model and a decision-

making role taken by the GP. Patient pressure describes situations that may involve some conflict of roles. The key difference between these two scenarios, though, was in the opportunity for the GP to share the clinical knowledge. In the *'incorporation of patients' views'*, GP13 adopts a PPA approach, maintaining control of the decision but allowing the patient to express some views which will affect the treatment decision.

"Now you might say well when do we refer whom to which em... Quite often we involve, well we involve the patients here in, in referral quite often people have particular views about physiotherapists or osteopaths either they like them or hate them or whatever so we .. we refer them to either physiotherapist or osteopath to get them seen"
GP13, low

GP02, describes a similar relationship with patients, and acknowledges that this is perhaps reminiscent of a paternalistic model.

"I'm not saying it's as simple as saying, you know, Trust me, I'm a doctor. I don't think er, I don't think we're allowed to do that any more. [No'] But I think if, if you actually let the patient express themselves and let them comment on the approach then I think then, they're, they're going to be much happier with the advice."
GP02, low

The GPs' descriptions gathered together in these sub-themes, were of patient preferences for specific treatments or tests, or aspects of their condition. This type of information e.g. preference for x-ray or physiotherapy is particular to the patient's experience of back pain or *'state'*. It was recognised that patients with experience of an illness or a chronic state would have quite highly developed knowledge of their state preferences.

"I think with a lot of chronic conditions when patients have lived with things for a lot of years they actually know their disease far better than you and I think you have to learn to respect that"
GP05, low

Conversely, *patient pressure* was a commonly described phenomenon in which patients want to make the treatment decision, but may not respond to explanation on the part of the doctor. The decision is sometimes made even before consultation. Patients use other sources of medical information such as the Internet, or the accounts given by others with similar conditions. The GPs quoted below are allowing the features of the ITDM model, but are not necessarily ensuring the transfer of the appropriate clinical information.

"I know the patient well enough to know that if she's decided she wants an x-ray, er I would have great difficulty in persuading her why she shouldn't have and she would undoubtedly produce at least four articles from the internet as to why she should have them if necessary"
GP24, high

"we are often bombarded by damned patients really who have all these expectations and ... and often unrealistic expectations and we try and meet them, we try and negotiate and we often end up... a management plan which is not an ideal perhaps but it's what the patient wants.." ... "the treatment of

back pain is quite complicated and certainly in primary care.. the patient expectations and.... their er views have to be taken into account and that often includes getting an X-ray done and ... I think most GPs just accept that that's the case.”
GP21, high

The minor degenerative changes described in the next quote are normal age-related findings on x-rays and do not have treatment implications associated with them. This patient did not accept the information given, however, or the interpretation of the x-ray:

“It wasn't going to change the management. We explained that to him but he eventually came with a big brother and sort of insisted he was going to be X-rayed so he was X-rayed and told he had minor degenerative changes and now I know from the consultation this morning he has made a formal complaint erm litigation.”
GP10, high

The integration of patient views may, in these situations, imply the selection of a course of action which is against the recommendations of the clinical guidelines. In these cases, failure to impart the clinical information effectively may result in an ill-informed patient as decision-maker and a sub-optimal choice is likely to result.

GPs clinical knowledge is also a factor that will affect the ‘quality’ of the decision made. The following interviewee made the lack of information explicit:

“you know, I find it difficult to sort of understand if we're exposing somebody to radiation, what does that actually do in practice? Does it increase their risk of, of cancer, etc.? And I, I don't, I don't know the answer to that so I'm, I'm unlikely to be able to explain it to, to patients.”
GP03, low

Knowledge of patients

Knowledge of patients was described variously in terms of background, personality, history of the relationship, family, work, and attitudes to health care amongst other things. These are relatively stable factors that appear to be relevant over the longer term, as opposed to specific preferences for health states or treatments.

Many GPs valued this knowledge of patients very highly. It was felt that patient knowledge helped not only in their diagnoses but also in the integration of patients’ preferences. GP10 (quoted below) gives an illuminating example of how such knowledge of trait characteristics of patients influenced a significant treatment decision.

“I recently saw a woman at home, not an old woman, with a very severe ... chest infection and some heart failure who really needed emergency, you know needed urgent hospital attention. But there was no way that she was going to, she was scared of hospitals and just wouldn't have anything to do with them and we just had to do the best we could at home. She recovered but that wasn't my..... I think if I didn't know her well I would have insisted that she be hospitalised and it's difficult to know whether I was doing the right thing in that circumstance but not for that patient, she would not have it and er

another ... you know if I hadn't known her as well another doctor might insisted that 'I am not going to look after you at home you are too ill, you need to be hospitalised'.”
GP10, high

In the case described above the expectation was of a much poorer prognosis with home care than with hospital. The disutility associated with hospital admission for this patient is known to her GP, however, and a choice is made to treat at home. GP10 highlights the issue by suggesting that another doctor, who was not aware of the strength of this patient's views, is likely to have made the *wrong* decision, basing it largely on clinical evidence and underestimating the potential loss of utility for the patient. Many other GPs valued this information of patients very highly, and placed emphasis the value of knowing patients.

“... patients generally in this practice even though they can see any doctor we advise them really to, to see one doctor once they get established, so we tend to know our own patients”
GP13, low

“I think as long as ... you talk of any guideline .. it's accepted that this guidelines will be used in the context of the GPs erm .. pre existing knowledge of this particular patient they are dealing with and erm the circumstances ... the particular circumstances that arrive.”
GP09, low

Knowledge of patients or 'trait information' is not necessarily seen as a substitute for eliciting patient preferences. It would be wrong to suggest GPs can predict specific preferences for treatment decisions based only on their pre-existing knowledge of patients. Trait information may, however, aid the elicitation of state information. Continuity of care via personal lists or otherwise was often very important to the GPs interviewed for these reasons.

“..the longer you are in practice .. that we know patients the easier the job becomes and general practice is a hell of a job when you start out because you don't know people, I think that's probably why and I think with this as well with all sort of illnesses you the patient has to be able to trust me and I ... I need to have confidence or trust them”

GP10, high

Evidence of the ITDM model

Only 3 of the GPs described patient decision-making, but those who did, as shown in this quote, saw the need for good clinical information.

“Not only X-rays but people go for all sorts of tests Radio-nucleide scanning, isotope scanning and they don't know the risk involved. The risks are small but everybody should know the risks of any procedure they have and some people may decide that they don't want to take that risk and that's the person's right, they should have that, to decide even though you may feel that this is of benefit to them so you know you may feel that it may diagnose their problem, if they don't want to have it that's their choice. It's a bit like somebody comes in and you advise some medication, if they don't like it I mean if they don't

want to take it you can't force them to it's free will but people all people should have the information to make that decision themselves."

GP06, low

"I give a different kind of medicine which a lot of people are ready for, ... a lot of people enjoy that I now.. empower them, empower them with books and understanding and counselling so they come to their decisions and I think there is a plus side to it. I get to know people's jobs and often they are helpful."

GP08, high

Few other GPs spoke in these terms, but it is important to note that for some the ITDM model was one that they appeared to conform to and believe in. (These were not extremely atypical individuals in the sample, either in terms of age or training).

DISCUSSION

The qualitative work reported here has revealed an interest by GPs in traits as well as the state-specific preferences of patients. The transfer of this trait information appears to be quite natural to the primary care setting from the GPs perspective. These different types of information are likely to require different elicitation and information-giving techniques. Traits may be elicited effectively during a series of 'exchanges' over time, but changing or specific preferences are likely to require individual, directed exchanges for effective information transfer.

In response to the points made by Gafni and colleagues, this paper questions the assumption that patient empowerment is a desirable aim per se. The central argument i.e. that the feasibility of information transfer is more easily envisaged in the ITDM model requires further consideration. There are difficulties with the transfer of complex information about patient utility functions, just as there are problems in transferring complex clinical information from doctors to patients. Additional problems regarding varying levels of clinical knowledge and situations of patient pressure are highlighted by the qualitative data. These are issues of information giving and receiving that are applicable to both models.

An alternative scenario is compelling, though, which considers the physician-patient *relationship* rather than the "physician-patient *encounter*" described by Gafni et al and which may be more suitable analogy in primary care. Preserving the notion of physician as perfect agent (which was also the model most commonly described in the qualitative interviews), the PPA model may have more to recommend it if we differentiate between the types of utility function we consider. The patient utility function(s) are likely to contain a range of arguments, some of which are relatively stable and which can be elicited over time. Recognition of the importance of trait information would support the feasibility of the PPA model, and have implications for policies concerning continuity of care.

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