Go the extra mile—use the Delphi Technique

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Introduction

In all walks of life change is an essential fact, embraced by some and denied or despised by others. Within the health care field the pace of change appears to have accelerated to an unprecedented level and its presence cannot have escaped staff working at any level in an organization. Two recent articles published in the Journal of Nursing Management highlighted the importance of proactive management of change (Cutcliffe & Bassett 1997; McPhail 1997). The ability to manage change is an essential skill that is required, not just by designated managers and administrators, but by all qualified staff working in health care (Mulholland 1994).

In turn, this ability to manage is guided by knowledge and skills. For example, knowledge of models of the change process, positive and negative responses to change and factors associated with successful change. Necessary skills would include those associated with interpersonal communication, planning and time management.

This article will focus on a research and management approach, the Delphi Technique, which, it is suggested, incorporates many valuable attributes associated with the successful management of change and, thus, has great potential for wider use in this field. As an illustration of the possibilities of the approach, details of a recently published study performed by the author are included. In addition, indications of how the findings were subsequently incorporated into the change process are also presented.

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Factors associated with positively managed change

For some the prospect of change is seen as energizing and exciting, providing the ongoing potential for improvement in services. However, others may be resistant to the same prospect perceiving it as yet another demand by others to do more with the same or diminishing resources (Meggison et al. 1989). In reality, this is often the case but, nevertheless, change in major or minor forms is now a permanent feature of organizations and needs to be actively managed if survival and advance are to be assured. Managers who achieve successful change appear to take account of change theory and demonstrate effective ‘change management’ skills. Change must not only be achieved but also consolidated if a slide back to the previous state is to be avoided.

McPhail (1997) suggests three common reasons why change in organizations is difficult to achieve: the reluctance of individuals to leave perceived secure situations, the lack of a shared vision, and the lack of adequate planning.

Staff can be encouraged to leave a relatively stable state by various means. Chin and Benne (1985) suggest strategies that emphasize either force (power/coercive), reasoned presentation (rational/empirical) or new roles and relationships (normative/re-educative). Emphasis on roles and relationships is different to the other two strategies (Cutcliffe & Bassett 1997) in that it signifies a ‘bottom up’ co-operative approach rather than ‘top down’ imposition. A cultural change in an organization which signals employee involvement, participation and collectivity (a further change to be managed) can result in more areas of agreed change, greater ownership of change programmes and, consequently greater chance of success.

The suggestion is that changes in roles and responsibilities occurs at all levels of an organization. Managers must acknowledge that they do not have the monopoly on good ideas and, instead, should often see themselves as the enablers or facilitators of developments and changes that may well be initiated and performed by their staff. By the same token, clinical staff must see the development of services and effective use of resources as their concern and not the sole remit of managers.

Health policy and strategic priorities are determined at a macro level by governments, purchasers and commissioners, although it is to be hoped they would consult widely rather than determine future direction in glorious isolation and the Delphi Technique would have potential for use in this macro context. However, the realization and implementation of policy or priority at a micro level is always left to others. It is exceptional for the detailed direction to be completely and precisely predetermined. The development of mental health services in England and Wales over the last 30 years is an excellent example of where successive governments have provided infrequent, non-specific policy ‘guidance’ and left the detail to be determined by local services.

The effective exclusion by senior managers and planners of the bulk of key mental health care system stakeholders (Rogers & Pilgrim 1996) may explain the widely acknowledged piecemeal development and lack of progress in many areas of the country. The term ‘street-level bureaucrats’ (Lipsky 1980) has been coined to describe front-line staff in service industries who cope with the inadequacies, perceived injustice and stresses of their work by devising and using their own procedures and professional discretion. Whilst their work activities are definitely responsive to public policy they are also responsive to other factors over which managers may have only partial control. Effectively, in these cases, clinical staff make policy and, in so doing, can seriously impact on the successful implementation of an imposed policy.

Lipsky (1991) suggests this reality does not remove the responsibility from managers for policy outcomes but that they should fit management tools to the task in hand. Wider involvement and participation in planning service developments would result in greater psychological ownership and commitment and hence a service that retains a closer, purer resemblance to the one that was jointly planned and agreed by all interested parties. Shared governance is now being advocated as a way of involving staff in decision-making (Brooks et al. 1998).

A recent British example of wider inclusion in the planning and development of new services is the reference to primary care groups in the government White Paper on The New NHS (DoH 1997). Here yet again, government determines the basic direction but leaves the details to GPs and community nurses who will work with local hospital managers and health authorities to determine the most appropriate services and treatments.

This normative/re-educative approach can also impact on the other two main reasons for failure briefly mentioned above. The lack of a shared vision can be alleviated by encouraging two-way dialogue and discussion to elicit a common focus that will engage staff and generate willing involvement and ownership in a positively anticipated future. Several authors (Makin et al. 1989; Torrington et al. 1989) advocate participation, active involvement and free communication as valuable means of engendering commitment and thus preventing or countering possible resistance or slippage. Finally, involvement in and ownership of ideas will, in turn, encourage and improve the process of joint forward planning of change.
programmes, thus impacting on the third reason offered for change being difficult to achieve. The primary care group arrangement mentioned above would be an example of more elaborate joint planning.

Managers should also be aware of attitudes and emotions of those staff who remain resistant to proposed changes. A procedure that incorporated some information on relative attitudes and views to different suggestions would have obvious uses in terms of predicting the extent and direction of resistance and maybe agreeing the agenda and timetable.

**Ways forward**

Should a manager wish to involve their staff in identifying potential areas for change and development then an obvious way forward would be informal discussion or formal interviews with staff, performed individually or in a project group/committee. Psychological processes can impact on the willingness of staff to engage in the task or reveal their ideas, especially where hierarchical status and inter-professional tensions are present in committees (Turoff 1975; Reid 1988). These factors would reduce the number and creativity of suggestions and ideas.

An alternative approach could involve construction of a questionnaire prior to a survey of interested parties. Via open or closed questions respondents could be asked to make suggestions for possible areas of change or, where the general area or direction has been imposed, provide details of possible developments.

The material collected could then be reviewed and used as the starting point for more detailed action, discussion or planning. The result would be that staff could feel some involvement in the initiation of the process of change and in the subsequent planning.

A further, less well known choice available to managers would be to use the Delphi Technique. This development of the use of questionnaires would still allow the manager to obtain the opinions and views of staff but, in addition, obtain information regarding likely areas of concurrence or resistance (McKenna 1994).

**The Delphi Technique**

The technique has a modern existence in America of approximately 50 years, having been used as a policy research tool, for example a Rand Corporation application included predicting survival following nuclear attack (Reid 1988). Sallah (1997) classifies it as one of several ‘consensus conference methods’. In health care settings the technique has a much shorter history but it has been used over recent years as a research methodology for determining priorities and alternative futures in a number of areas (Beretta 1996).

Reid (1988) defines the technique as ‘a method for the systematic collection and aggregation of informed judgments from a group of experts on specific questions or issues’. It uses rounds of written questionnaires and guaranteed anonymity with summarized information and controlled feedback to produce a group consensus on an issue.

Recent descriptions and critiques of this methodology include those by McKenna (1994), Beretta (1996) and Goodman (1987). Advantages of the technique identified in the literature include: efficiency and cost effectiveness compared with, say, committee meetings or personal interviews (Davidson et al. 1997); ability to guide a group towards consensus and a final decision—a quality that McKenna (1994) judges to be especially important in the future development of nursing knowledge and policy; and increasing the acceptability of results. It is novel, interesting and motivating for participants and has the ability to obtain large quantities of information. It is also suggested that the technique should have high content, face and concurrent validity because of the use of a panel of ‘experts’ and the quest for consensus (Goodman 1987).

Purported disadvantages associated with the technique are the lack of an agreed minimum sample size along with an absence of the usual representative sampling techniques (because experts are selected or nominated) and the lack of consensus about what is meant by consensus (Beretta 1996). Other reviewers comment on the poor response rate for later rounds of voting and the possible lack of accountability for views expressed that could result from anonymity. Its respectability as a pure research approach is sometimes questioned and it is probably best viewed as a way of ‘dealing with problems that do not lend themselves to precise analytical techniques but can benefit from subjective judgements on a collective basis and researching questions when a more scientific instrument may be unsuitable for other reasons’ (Reid 1988).

Figure 1 shows the typical stages in the procedure for administering the Delphi Technique. A ‘panel of experts’ is organized and asked to generate suggestions for possible alternative developments/outcomes in an identified field related to their area of experience or expertise. This process is accomplished via the first questionnaire which has a simple format that would provide contextual information in its introduction before inviting each expert panel member to contribute either a limited (Davidson *et al.* 1997) or unlimited number of suggestions. The returned questionnaires are collated and a list of suggestions are sorted and ordered to eliminate overlap or
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standard surveys, namely qualitative information regarding attitudes and considered opinions. The summaries of this ‘value-added’ information could, by implication, indicate likely areas of common support for change, or strengths of resistance to it.

The process of planning and implementing change shares many similarities with the rational process of creating and implementing policy identified by Hogwood and Gunn (1984). Indeed, it is often the case that a newly created or revised policy is the change to be managed. Figure 2 provides an indication of the many points in the policy/change management process at which the Delphi Technique might prove useful as one tool in the information-gathering and decision-making exercise.

**Recently published example**

**Research study**

Over the course of 3 months the author recently completed a study of two community mental health facilities (Beech 1997) that illustrates the potential strengths of the Delphi Technique as a means of generating ideas and obtaining considered opinions of ‘experts’. Crucially, the technique also provides data on the likely resistance to the implementation of those ideas.

Only a concise description will be provided here and the reader is directed to the article reference for a fuller account of the procedure adopted and the results obtained.

Using the Delphi Technique the multidisciplinary staff at two mental health centres, the ‘experts’, or, more precisely, individuals with a knowledge of a particular area, were surveyed about the performance of the centres during the first 2 years of their operation and about the possible developments that could occur during the next 2 years using three sequential questionnaires and two rounds of voting.

The first questionnaire elicited suggestions for possible developments that were collated, organized under appro-

![Figure 1](image1.png)

Typical stages in the procedure for administering the Delphi technique.

repetition. This list forms the basis for subsequent questionnaires.

Suggestions for a particular issue, for example the future of nurse education or the future role of the community psychiatric nurse, are each scored by the panel along a constructed dimension. The dimension is an ordinal scale (1–7 for example) and suggestions could be rated in terms, say, likelihood of occurrence, importance or relative priority. The sequential rounds of voting, whilst being undeniably more time consuming and demanding of collation and analysis than a single questionnaire, have the advantage of sharpening respondent awareness and determining content validity (Whiting 1994).

The technique could have useful applications in a ward or department where multidisciplinary or hierarchical teams make interviews impractical and avoids ‘the potentially destructive group dynamic effects that would have accompanied other techniques, for example, brainstorming, group discussions or committee meetings’ (Beech 1991).

In later rounds it is also possible to request either a rationale or clarification from experts who score items outside a particular range, for example, ± two points of the group median score. These comments could be incorporated in to later rounds of voting (maybe in summary form) so that a fuller consideration of all suggestions is achieved. In this way it can readily be seen that the technique can convey an extra dimension missing from

![Figure 2](image2.png)

Possible uses of the Delphi Technique in the change or policy process. Adapted from Hogwood and Gunn (1984)
priate category headings and then sent to each respondent as a second questionnaire for consideration and rating in terms of ‘likelihood of occurrence’, a measure assumed to incorporate some composite of feasibility and desirability. The rating was on a seven point scale with 1 equating to extremely unlikely, 3—possible, 5—probable and 7—extremely likely. Figure 3 shows an extract from this questionnaire for one of the mental health centres.

The results from this second questionnaire were again collated and reconstructed as a third questionnaire. This was the same as the second but included additional information in the form of the respondents’ personal scores and the median group scores for each item in the previous round. Figure 4 shows an extract from the third questionnaire for one of the mental health centres. Again the respondents were asked to vote on the likelihood of each suggestion occurring. On this occasion, after perusal of the group score, respondents were able to retain their original rating for each suggestion or revise it up or down. At this point the results were again collated and presented as the team consensus after two rounds of voting.

Each questionnaire was distributed individually by post to each respondent to ensure privacy and freedom to consider responses and modify them without any of the interpersonal or inter-professional pressures that would have accompanied a group approach. Only the person co-ordinating the exercise knew the identities of respondents, essential since an individual’s previous ratings had to be returned for reconsideration in a subsequent round.

The results obtained included 58 suggestions for change/development for one mental health centre and 82 for the other. Each suggestion had been generated by the staff working in the centre during round 1 (the exercise was performed simultaneously but entirely separately for each of the centres) and subsequently received consideration before being rated on two separate occasions. Within these totals there were very few negative or contradictory suggestions. Some of the suggestions had no financial implications whilst others would entail large and continuing funding.

The range of suggestions included:

- possible additional therapeutic activities (individual counselling, psychosocial interventions with families);
- new functions for the mental health centres (drop-in facility, crisis intervention team, 24 hour telephone assistance);
- different styles of working and staff organization (outreach work, stable nursing staff placements in day or inpatient parts of the facility, weekend opening);
- the formation of new professional relationships with statutory and voluntary services (providing information on services available, user involvement in planning services, wider use of facilities);
- prospective new client groups for those currently not catered for (younger people, bereaved); and
- specific evolving staff roles to meet the continued development of community psychiatric services (duty professionals, domiciliary workers, clinical supervisors and group facilitators).

These are very healthy numbers of suggestions but a similar list could have been obtained using a single questionnaire or possibly a very well organized group brainstorming session. However, additional data was also obtained regarding ‘group consensus’ even though the group never met together as ‘a group’.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Round 2 scores</th>
<th>Round 3 Median scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Telephone help line</td>
<td>* 4 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>24-hour crisis support team for clients and their families</td>
<td>* 2 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>More health promotion/education for clients and their relatives</td>
<td>* 5 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Health education work in local schools</td>
<td>* 4–5 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Generally a wider variety of therapies allowing staff to gain more skills and experience</td>
<td>* 5–6 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>More group psychotherapy</td>
<td>* 4 1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4
Extract from questionnaire number 3: day-patient suggestions

For each suggestion, median round 3 rating score, maximum, minimum and range of rating scores were also provided to managers (and subsequently staff). Figure 5 shows a section of one of these summaries. In each mental health centre at least 70% of suggestions received a high level of endorsement by staff (scores of 4 or higher), which proved encouraging. This data could not have been obtained from a single questionnaire and would have been difficult and tedious to obtain (and of extremely dubious merit) if its collection had been attempted in a group or committee context. Some suggestions concerned practices that were already in operation and so best viewed as being endorsed by staff. In this way the technique was seen to contribute data and insight to the mainstream ongoing managerial evaluation and audit of clinical practice after 2 years. Line managers expressed satisfaction with both the results and, more generally, the Delphi Technique.

Thus, the investment of a little more time and effort but very little extra cost has resulted in the acquisition of important information concerning staff attitudes. This information could make all the difference in determining successful agendas, sequences and whether a change becomes established and integrated, the new reality, or whether there is a gradual return to the previous state.

It is not the intention to present the Delphi Technique as a panacea for all the problems of managing change in health care organizations. It should be noted that in this case a number of issues arose from the suggestions made by staff, as would be expected when service development is being considered within existing budgets. The suggestions raised many further challenges to the management of resources and budgets, for example, in the areas of:
- staff training and continuing education;
- acquisition of new skills and clinical supervision;
- role expectation, development and blurring;
- nursing staff organization, numbers, grading and skill mix;
- internal and external communication networks; and
- involvement of user representatives.

However, completion of the exercise demonstrated clinical staff attitudes and priorities, flagged up preferred options and relative commitment and highlighted constraints and difficulties (as well as perceived successes) within the current system. Thus, the description of the research study provided above would closely equate with stages 1–5 of the model shown in Fig. 2. Indeed, it proved possible to take the summarized material further through the model, as will now be demonstrated.

Management utilization of Delphi data

At one centre the researcher was invited to present the resulting list of suggestions and scores, along with the associated issues at a staff ‘away day’. This material facilitated for the first time a general discussion and acknowledgement of differences of opinion within and between professions and professionals. It was also valued for not only generating and focusing ideas about future development but also identifying the strengths and weaknesses of current performance in such a way that it contributed to the overall evaluation of service provision.

The individual suggestions, along with the subsequently devised summary thematic categories—general management, trusts, fund-holding GPs, etc; quality assurance and standards; community care legislation, supervision registers, etc; change of staff roles and function of mental health centre; developments in therapies and skills; communication and continuity; involvement of users and relatives—were then used for the remainder of the day as the basis for determining strategic priorities and allocating individual and small staff group responsibilities. This activity could be associated with stages 5–6 in Fig. 2.

Action plans with associated short-, medium- and long-term time scales were also agreed. These included short-term actions such as the closer integration of day-patient and inpatient activity programmes as well as longer-term projects, for example, involving a user representative in the planning of the next year’s programme, organizing an

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<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Round 3 results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Median Minimum Maximum</td>
</tr>
<tr>
<td>22</td>
<td>Health Education by visiting professionals — chiroprody, dentistry</td>
<td>4 3 7</td>
</tr>
<tr>
<td>23</td>
<td>Involving relatives and carers in care planning, subject to clients wishes</td>
<td>6 3 7</td>
</tr>
<tr>
<td>24</td>
<td>More work with families especially those with a schizophrenic member: psychosocial education</td>
<td>6 3 6</td>
</tr>
<tr>
<td>25</td>
<td>Relative support groups developed</td>
<td>6 5 7</td>
</tr>
<tr>
<td>26</td>
<td>Different levels of groups with definite review dates/periods</td>
<td>6 4 7</td>
</tr>
</tbody>
</table>

Figure 5
Section from summary presented to manager and respondents: day-patient suggestions

open day for purchasers and devising a tool to monitor customer satisfaction.

**Evaluation—evidence of success**

Frequently ‘away days’ can raise expectations and enthusiasm but in fact achieve very little and ultimately lead to greater staff disillusionment and apathy. Recent meetings with the centre manager have highlighted the achievement of the following developments, all of which were planned on the away day and relate to the study suggestions/themes.

- client feedback sought on groups and group programme, clients now evaluate each group (suggestions 22, 37);
- increased opportunities to integrate inpatients and day-patients by the provision of simultaneous groups that cater for a greater range of abilities (suggestions 19, 24, 26, 27, 29);
- staff education and training—CPA and supervision registers (suggestions 5, 30), psychosocial interventions (suggestions 24, 45, 48, 49);
- involvement of users, identification of a user representative (done quickly after the away day and continued since), use of centre by local user group fortnightly (suggestion 16);
- an annual away day to improve staff working relationships (suggestions 15, 47);
- improved communication networks within centre and between centre and other services (suggestions 11, 12, 13, 15) including staff exchange and secondment, attendance at review and referral meetings;
- emphasis on serious mental illness (suggestions 1, 23, 24, 32, 45) including staff attendance on PSI training courses staff to work with clients in group homes (supporting other statutory and voluntary service staff) and client’s own home (domiciliary work) (suggestions 17, 19, 20, 32) including the employment of extra staff for this purpose;
- extension of opening time evening sessions (suggestions 9, 16); and
- more counselling and change of skill-mix (suggestions 28, 42, 44) including staff development and employment of a counsellor.

Thus, it can be seen that the completion of this work would relate to performing stages 7–9 in Fig. 2. Although it would be inappropriate to allocate all of the credit for these significant developments to the Delphi survey, some of them are occurring more generally and would probably have happened sooner or later, it is readily acknowledged that it had a significant role to play in ‘flagging up’ suggestions and gaining staff attention and commitment.

**Conclusion**

It has been argued that all staff in an organization must be involved and engaged for change to be consolidated. This can be achieved by overcoming reluctance to move, creating a shared vision and by having a detailed plan. The key to success is involvement in all stages of the change process to engender commitment to and ownership of any decisions reached. Involvement needs to be managed.

This article has attempted to illustrate the potential of the Delphi Technique as a management tool for those who have to manage, co-ordinate or facilitate change in health services. The versatile technique can both generate suggestions and obtain considered opinions from informed individuals on those suggestions, based on a particular criterion, for example, relative priority, professional importance, probability or likelihood of occurrence which can assist in decision-making. In addition to signalling wider staff involvement, the opportunities for repeated consideration provide attitudinal data indicating degrees of co-operation or resistance that is otherwise difficult to obtain.

In relation to the particular example used as an illustration in this article, the managers who have been consulted about the study acknowledge that the Delphi Technique has added an important extra dimension to the information collected for analysis. It was also of great assistance in determining the direction of development of the service. For this reason the approach is offered as one that has great scope for use in situations where instant decisions are not required and where, in the absence of any definitive answers, individual subjective judgements can contribute to producing an acceptable way forward for a group.

**References**


