Implementing Participation Strategies in Hospitals: Correlates of Effective Problem-Solving Teams

Christopher G. Worley, Ph.D.
Pepperdine University

Abstract

More and more hospitals are attempting to change their organizations and improve quality, customer satisfaction, and clinical outcomes or reduce costs through participation strategies that involve organizational members on problem-solving teams. The key to the success of these strategies is the effectiveness with which these teams solve pressing organizational problems. This article presents the results of a survey completed by over 75 people representing 30 problem-solving teams in five hospitals from four states. The results suggest that team are fairly productive but have not generally affected the more substantive aspects of hospital operations. Recommendations for improving team effectiveness are given.

Patient-centered care, total quality management, employee involvement, and shared governance are examples of participation strategies that have caught on in hospitals. Buffeted by health care reform, prospective payment systems, managed care, JCAHO standard changes, and payor pressures, hospitals have begun experimenting with various high involvement or participation strategies intended to improve quality, productivity, and clinical outcomes and to cut costs (Heilig, 1990; Edmonds and Zagami, 1992). A cadre of organizational consultants specializing in health care have urged hospitals to adopt these strategies, despite considerable implementation costs, arguing that the benefits of such efforts more than outweigh their costs.

A prominent assumption in most high involvement strategies is the important and efficacious role played by problem-solving teams that address opportunities for improvement. In line with trends towards more team-based organizations (Galbraith and Lawler, 1993), these strategies emphasize the development of skills and knowledge associated with being

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an effective team player in addition to the more content-oriented aspects of identifying and solving organizational problems. For example, training programs in continuous quality improvement often emphasize how to run meetings, resolve conflict, follow problem-solving models such as plan, do, check, and act, and communicate effectively with other team members. This emphasis on effective teaming often comes at the expense of attention to team design issues such as membership, team size, and structure. The assumption appears to be that good team processes or higher levels of individual effort are more important than basic structural issues in producing both high group satisfaction as well as higher impact on operational outcomes, such as quality, cost, and speed.

Despite a relatively large and well-developed literature on task group effectiveness, there is little work describing these groups in health care settings (e.g., Heilig, 1990; Edmonds and Zagami, 1992). Given the high levels of interdependency characteristic of hospitals, especially compared to more traditional organizations, effective teams may exhibit different characteristics or face different contexts of effectiveness. As a result, this article attempts to address important implementation issues associated with these interventions. Its purpose is to 1) describe the characteristics of problem-solving teams in hospitals, 2) describe the correlates of team effectiveness, and 3) make preliminary prescriptions regarding the establishment of teams in a health care setting such that the participation strategy selected has a better chance of being implemented successfully.

The Sample Data

The data reported here represent survey responses from 30 problem-solving teams in five hospitals from California, Colorado, Minnesota, and North Carolina. Each of the hospitals was involved in implementing a variety of participation strategies, the most predominant intervention being continuous quality improvement (CQI). The hospitals' experience with CQI varied widely, from initial efforts to mature programs. Each hospital randomly selected between two and ten teams to be surveyed. Each team had at least two members complete the survey, one of which was the team leader. Individual surveys were combined to form team responses with the individual surveys serving as reliability checks. With few exceptions (discussed below), the individual surveys were in close agreement with each

other and where there was disagreement either a majority answer or average answer was used. In addition, all teams had a "champion," "sponsor," or "facilitator" complete a similar survey. Sixteen of these sponsor surveys could be matched to the team surveys to provide a powerful third-party objectivity and reliability to the structure, process, and outcome measures.

The Team Member Survey

The team member survey consisted of four sections. The first section contained fifteen questions concerning the type of team, age of the team, the number of problems discussed and solved, team membership, records kept and so on. In the second section, a list of 29 pre-tested items asked about group functioning on a 5-point, strongly agree to strongly disagree, Likert scale. These items have been extensively used in prior research (c.f., Worley and Ledford, 1992). Confirmatory factor analysis verified their membership in nine scales. Three scales concerned subjective team outcomes, such as group satisfaction, group accomplishment, and feelings of group frustration. The remaining six scales addressed group process and structure issues, such as the clarity of group goals, intensity of effort, the use of good problem-solving processes, group structure for efficiency, ability to handle conflict, and integration of the group with the organization's goals. With the exception of this last scale which had only one item, Cronbach reliabilities were excellent, ranging between .76 and .92. In the third section, l9 pre-tested items asked respondents to rate the impact of their work on employee involvement, improved clinical outcomes, improved productivity, and employee development. Reliabilities were again excellent, ranging from .68 to .83. Other outcomes, such as better jobs for employees, rewards being more closely tied to performance, and accomplishment of strategic goals, were also measured as single-item scales. The response format for this section ranged from l (strongly negative impact) to 5 (strongly positive impact) with a sixth category reserved for "do not know."

The Sponsor Survey

The questionnaire completed by the team's sponsor, champion, or facilitator was essentially the same one completed by the team members. The first and third sections were identical. The second section also addressed group functioning issues but utilized items that could be

answered by someone who was not a member of the group. Reliabilities for the sponsor survey were very similar to the team member survey.

Results

Models of problem-solving team effectiveness typically utilize four variables: group structure, group process, group context, and group effectiveness (Bettenhausen, 1991; Sundstrom, DeMeuse and Futrell, 1990; Gladstein, 1984; Ancona and Caldwell, 1993). The results are described according to these categories. First, characteristics of group structure, process, and context are discussed. This includes a comparison of team member vs. sponsor results. Second, the impacts and outcomes of these teams are reported. Third, the group structure and process variables are correlated with the group outcome and impact data.

Problem-Solving Team Characteristics

This section reports on the teams' structure, process, and context. Structure refers to the group's composition, roles, size, and purpose. Process refers to the way a group goes about its task and the characteristics of that method. Finally, context represents the extent to which the group is embedded in and tightly linked to the organization's strategy, structure, and processes.

Group Structure. Group structure is operationalized in terms of the group's size, the number and type of group members (Worley and Ledford, 1992), the clarity of its goals (O'Leary-Kelly, Martocchio, and Frink, 1994), and the extent to which it keeps records or documentation of its activities (formality). Table 1 describes these characteristics as reported by both group members and the sponsors.

The groups in this sample averaged 19 months in age; 10.6 people in size and kept about four different types of records. The most common records kept were meeting minutes, action plans, and reports to management. About three-quarters of the teams were cross-functional in composition; only about 1 in 3 teams had a physician member; and had two supervisors or managers, but only 1 in 2 teams had an executive member. Thus, these teams were dominated by the bottom to middle of the hospital structure.

While 89% of the team members (and 92% of the sponsors) believed the team had clear goals, only 59% of the team members believed that the team was structured efficiently for problem solving. Perceptions of inefficiency increased with group size and were more associated with cross-functional teams. This seems to be a recipe for high frustration (see below for confirmation of this). Figuratively speaking, "our team knows what we are supposed to accomplish but we aren't set up in a way to achieve the goals." Given that about 75% of the groups in this sample (and common in our experience with hospitals) are cross-functional in nature, this frustration may be endemic in health care settings. The hospital, by its nature is highly interdependent and any problem worth tackling is likely to touch a variety of functions and departments. Cross- functional problem-solving is a very different and more difficult process because of the "turf" issues involved, the complexity of coordination, and the nature of the problem itself.

Table 1: Group Structure Characteristics

Variable	Member	Sponsor
Age of team in months	19	19
Type of Team		
Work Group	10%	4%
Departmental Group	17%	15%
Cross-functional Group	73%	81%
Size (People/Team)	10.6	10.7
Composition		
Avg. number of Physicians	.35	.38
Avg. number of staff RNs	3.8	3.1
Avg. number of supervisors/managers	2.2	2.4
Avg. number of executives	.62	.58
"Efficient" Team Structure (Percent Agree)	59%	- - -
Goal Clarity	89%	92%

(Percent Agree)

Number of different types of records kept 3.3 4.5

[1] The team type variable was determined according to the following criteria. A work group team was one where all members reported to the same supervisor. A departmental group had members with different supervisors but who all worked for the same function (e.g., nursing). A cross-functional group had members coming from different organizational units.

Group Process. A variety of variables have been used to understand group process including group cohesion (Zander, 1994), conflict management (Walton, 1987), norms (Clapp, 1980), use of problem solving methodologies, levels of commitment and so on. For our purposes, group processes were measured by three team variables and four sponsor variables. These are shown in Table 2.

Table 2: Group Process Characteristics[1]

Variable	Member	Sponsor
High intensity of effort	90%	92%
Good problem-solving skills/process	83%	96%
Handle conflict well	53%	64%
Developing as a team over time	- - -	88%

[1] Results reported in terms of the percentage of people on a team that agreed or strongly agreed with a scale.

With the exception of handling conflict, the teams in this sample are in fairly good agreement that they have the necessary ingredients to address problems successfully. Team members and sponsors report a high degree of enthusiasm and strong problem-solving skills and processes. Eighty-eight percent of the sponsors agree that the groups are developing as a team over time. Although lower, about half of the teams themselves and almost all of the sponsors believe the teams handle conflict well.

Group Context. Group context refers to the group's relationship with its environment (Gladstein, 1984) and is operationalized in terms of the alignment between the group's existence and organizational structure, technology, culture, reward systems, and strategy (Table 3).

Table 3: Groups in Context

Variable	Member	Sponsor
Number of functional resources used in the problem-solving process	2.3	3.3
Number of communication channels used in the problem-solving process	2.2	4.6
Number of teams receiving no rewards	63%	39%
Average number of rewards/team	0.4	1.3
There was a compelling business reason to start the team (Percent Yes)	64%	100%
Group's objectives fit with hospital's goals (Percent Agree)	80%	64%

Team members and sponsors did not agree on the extent to which teams were well integrated into their environments. In general, sponsors believed that the group was more connected than team members. For example, sponsors reported that the team used more functional resources (2.3 vs. 3.3) and communication channels (2.2 vs. 4.6) than team members. In addition, the sponsors were much more likely to say that the team had received some type of reward (.4 vs. 1.3) for their activities and that the team was formed for a compelling business reason (64% vs. 100%). The one area where the sponsors were less favorable was on the extent to which the group's objectives fit in with the goals of the hospital. In this case, only 64% of the sponsors agreed while 80% of teams believed that their goals were aligned with the hospital's.

Team Outcomes and Impacts

In this section, indicators of team effectiveness are examined. Effectiveness has several dimensions including objective and subjective impressions as well as performance and organizational components. Table 4 displays the team reported subjective outcomes of team effectiveness,

namely team satisfaction, accomplishment, and levels of frustration. In addition, it shows the teams' and observers' reports of the team's impact on various organizational dimensions, including employee involvement, clinical outcomes, and productivity.

With respect to team outcomes, members are satisfied and believe that they have accomplished things that benefit the hospital. The means of about 3.8 and the relatively small standard deviations for each of these outcomes suggests fairly good agreement among members. However, there does appear to be some frustration. Group members neither agree nor disagree with statements concerning frustration over team functioning and the higher standard deviation indicates that many teams were frustrated.

Both the team and sponsor surveys contained a question that asked, "How many different changes have been actually implemented as a result of your (this) group's efforts?" For the team survey, there was considerable disagreement among team members and across different teams. The average number of changes reported was 2.8 with a standard deviation of 4.19. The median for this distribution was 2 and three values (0,1, and 2) tied for the mode. For the sponsors, this number increased to 4.25 with a standard deviation of 5.50. The median value was 2.5 and the modal value was 1.

Table 4: Team Outcomes and Impacts

Variable	Member [1]	Sponsor [1]
Team Satisfaction	3.85 / .70	- - -
Team Accomplishment	3.79 / .62	- - -
Team Frustration	3.00 / 1.02	- - -
Number of Changes Implemented	2.77 / 4.19	4.25 / 5.50
Employee Involvement	3.67 / .43	4.08 / .62
Clinical Outcomes	3.98 / .54	4.39 / .82
Productivity	3.87 / .50	4.27 / .81
Employee Development	3.88 / .42	4.26 / .87
Meeting Strategic Goals	3.82 / .46	4.21 / .72
Better Jobs for Employees	3.40 / .59	4.00 / .91

[1] The first number represents the average response where 1 = strongly negative impact and 5 = strongly positive impact. The second number is the standard deviation.

Part of the variation in this number is logically accounted for by the age of the team. The older the team, the more likely they are to have implemented more changes. However, for both the team and sponsor data, the correlation of age and the number of changes implemented was not significant. A second source of variation is the type of team. Quality improvement teams, for example, typically only address one problem and then move on while shared governance groups work on numerous issues. In this data, there was a preponderance of cross- functional teams from hospitals implementing CQI and thus may partly explain this low figure. However, this data was dominated by cross-functional teams ostensibly addressing cross-functional problems that tend to be large and complex, requiring more time and effort to solve. Finally, finding a time when everyone can meet is more difficult in a hospital setting than in other organizational contexts. It may take a longer to solve similar problems under these conditions. Still, given that the average age of the teams in this sample was 19 months, the teams solved between .15 and .22 problems per month or a little more than one problem per year.

Finally, Table 4 shows that the team members and the observers disagreed on the impact the teams had on various aspects of organizational functioning. Observers consistently rated the team's impact higher than the team itself. In general, however, both team members and observers tend to see some "positive" impact. The highest impact was on clinical outcomes and the lowest impact was on making jobs more desirable.

Correlates of Effectiveness

In this final results section, the relationship between team reported characteristics and observer reported impacts is examined. The data used here is restricted to those teams for which a sponsor survey could be matched with a specific team. Table 5 displays the correlations between team members' reports and perceptions of group structure, process, context, and subjective outcomes with sponsor reported impacts on employee involvement, clinical outcomes, productivity, employee skill development, accomplishing strategic goals, making better jobs for employees and the

number of actual changes implemented by the team. Utilizing the sponsor's evaluation of impact and the number of changes implemented make for a stronger test of the team's impact. Correlating the team's perceptions of their own impact tends to bias the association in an upward direction.

Table 5: Correlates of Problem-Solving Team Effectiveness

	Observer's Perceptions of Impact on:			
Variables	Employee Involvement	Clinical Outcomes	Productivity	Employee Development
Structure:				
Team Type	-.17	-.14	.01	-.05
Efficiency	.04	.03	.16	.06
Goal Clarity	-.23	-.18	-.26	-.39*
No. of Members	.26	.14	.25	.35*
Process:				
Intensity	.15	.09	.27	.20
P.S. Process	.06	.03	.17	.07
Conflict	.12	-.06	.25	.15
Context:				
Fit	-.15	.09	.27	.20
Communication	.20	.15	.17	.25
Resources	.15	.14	.05	.15
Rewards	.40*	.26	.40*	.54**
Outcomes:				
Satisfaction	.21	.24	.28	.32
Accomplishment	.32	.27	.40*	.57**
Frustration	-.09	-.02	-.19	-.24

* $p < .10$
** $p < .05$

Variables	Strategic Goals	Better Jobs	Number of Changes
Structure:			
Team Type	.07	.00	.10
Efficiency	.01	-.15	-.51**
Goal Clarity	-.39*	-.31	-.29
No. of Members	.47**	.32	.69**
Process:			
Intensity	.11	.04	-.30
P.S. Process	.04	-.07	-.38*
Conflict	-.12	.12	-.26
Context:			
Fit	.11	.04	-.30
Communication	.15	.34*	.57**
Resources	-.25	.25	.27
Rewards	.44*	.38*	.57**
Outcomes:			
Satisfaction	.22	.13	-.10
Accomplishment	.25	.32	.15
Frustration	-.23	.11	.17

* $p < .10$
** $p < .05$

Typical of these types of comparisons, the correlations are generally low and non-significant. But there are important patterns. First, the number of significant correlations is larger for the structure and context variables. For the structural variables, the number of supervisors was associated with three outcomes: the development of employee skills and abilities, the creation of more desirable jobs for employees, and a higher number of change being implemented. For the context variables, the number of rewards a team received was associated with five impacts: improved productivity, the development of employee skills and abilities, the accomplishment of strategic goals, more desirable jobs for employees, and a

higher number of changes. There was only one significant correlation between impact variables and process variables.

Second, neither structural, process, nor context variables had much of a relationship with the more substantive employee involvement, clinical outcomes, or productivity variables. As noted above, the number of rewards was associated with productivity although a good case can probably be made that rewards is the dependent, not independent variable. That is, if a team was able to affect productivity, it probably improved the chances of a team getting rewarded.

Third, and on the other hand, structural and context variables had fairly broad impacts on employee development, strategic goals, better jobs, and the total number of changes implemented by a team.

Discussion And Recommendations

The results point to two broad and not necessarily encouraging conclusions. First, compared to other contexts, employee problem-solving groups in hospital settings are not particularly productive in terms of the number of problems solved per unit of time. Dent (1994) found that a cross-section of manufacturing and service problem-solving teams averaged between 4 to 8 problems solved over two years while Worley and Ledford (1992) found that the average problem-solving team in a telecommunications company implemented two changes in nine months. Second, these teams have not affected the more substantive aspects of hospital operations. The popular and hospital trade press is full of examples of problem-solving teams that drastically reduced infection rates, medication errors, waiting times, and costs or improved patient satisfaction (Heilig, 1990; Edmonds and Zagami, 1992). In addition, these “successful” programs, have also improved the quality of work life, the amount of participation in decision making, and the communication between managers and employees. The results presented here call into question the validity of such anecdotal evidence. That the present data come from a relatively small number of teams and from hospitals that have been relatively successful in implementing participation strategies, makes this conclusion all the more noteworthy.

If this result is confirmed by others and stands the test of time, it could understandably discourage hospital administrators from implementing these strategies. That would be a mistake however. This data suggests that the implementation of these strategies may be suffering, not that the strategy itself is flawed. Rather than abandoning the whole concept of participation, the data also suggest ways to improve the efficiency and productivity of these teams.

First, the preponderance of cross-functional teams and the increased difficulty and length of time required to address cross-functional problems suggests that hospitals may want to think about using more work group teams. Cross-functional teams are very difficult to establish and run. While team members were clear about the goals and believed they had good enthusiasm, etc., they did not believe they were structured efficiently for problem solving and their productivity rates were not high. Work group teams can focus on more homogenous problems, work with people they know, and can gain valuable problem-solving experience before tackling more complex cross-functional problems.

Second, there were a small number of physicians and executives on the teams. These two categories of personnel have stereotypical, results-oriented, and bottom-line perspectives. By increasing the "horsepower" available to a team, a more production-oriented process may result. This recommendation must be balanced against a caution to guard the process. Early in the implementation of these participation strategies, it is important to follow a disciplined problem-solving process. Physicians and executives are more likely than others to want to circumvent the process because they think they know what the answer is.

Third, the number of reward instances was quite small and yet was one of the variables most correlated with impact. Any participation strategy is an organizational intervention with systemic effects. To alter work design, skills and knowledge, or the amount of participation in decision making without also addressing reward or information systems ignores these systems implications (Lawler, 1991; Senge, 1990). Clearly, more attention must be paid to reward systems. There were too few instances of rewards for teams, there was no relationship between the age of the team and the number of rewards they received, and there was no belief that the rewards were tied more closely to performance as a result of the

intervention. The clear implication here is that people will feel used. When asked to take on additional responsibilities by becoming a team member to solve important problems for the organization, people can be expected to want recognition for their efforts. Not getting recognized for accomplishments is a recipe for increased frustration, cynicism, and apathy.

Increasing attention to the reward system is problematic however, given the relatively weak status of human resource departments in hospitals. In this period of layoffs and reductions in force, the human resource department is more likely to be focused on outplacement, grievances, and other "people" problems. But human resources is also the home of the compensation system and this represents an important lever for change and increased status that should not be overlooked.

Fourth, the relatively low problem-solving rate of the hospital teams suggests that administrators may want to think about ways to concentrate problem-solving effort. This may be accomplished in several ways. First, certain teams could be given concentrated periods of time to complete a project or address a problem. This may decrease the problem-solving cycle time. Second, the steering committee or team sponsors could provide some initial direction to the team about pressing strategic issues that the team could address. This tactic has the added benefit of linking the team's activities more closely to organizational priorities and embeds them in the hospital's context. Third, ongoing projects, such as information systems changes, medical staff integration, or other strategic changes, could be folded into the problem-solving team format. This would again increase the relevance of the teams' efforts.

Increased participation by hospital employees is an appropriate response to health care reform and other environmental changes. Hospitals must be able to understand and control their costs and operations if they are to prosper under capitated and other managed care scenarios. To fully reap the benefits of these strategies, however, requires effective implementation. The data reported here suggest that several important elements of implementation have been executed. The teams are working on important issues, team members and observers believe that the teams are using good processes and working effectively, and the teams are helping to develop new employee skills and abilities and addressing strategic issues. However, to affect the more substantive aspects of hospital operation, the data

presented here suggests that administrators should pay more attention to the composition and structure of the teams and work to integrate the teams into the reward system of the organization. These small but important implementation issues supports the colloquialism, "the devil is in the details."

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