Evaluating the effectiveness of health care teams

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Abstract

While it is recognised that effective health care teams are associated with quality patient care, the literature is comparatively sparse in defining the outcomes of effective teamwork. This literature review of the range of organisational, team and individual benefits of teamwork complements an earlier article which summarised the antecedent conditions for (input) and team processes (throughput) of effective teams. This article summarises the evidence for a range of outcome measures of effective teams. Organisational benefits of teamwork include reduced hospitalisation time and costs, reduced unanticipated admissions, better accessibility for patients, and improved coordination of care. Team benefits include efficient use of health care services, enhanced communication and professional diversity. Patients report benefits of enhanced satisfaction, acceptance of treatment and improved health outcomes. Finally, team members report enhanced job satisfaction, greater role clarity and enhanced well-being. Due to the inherent complexity of teamwork, a constituency model of team evaluation is supported where key stakeholders identify and measure the intended benefits of a team.

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What is known about the topic?

Effective teams and teamwork are essential for the provision of quality, safe health care.

What does this study add?

This author summarises the literature to illustrate how the effectiveness of health care teams has been measured and some of the evidence that teams are more effective than single practitioners in providing a range of important outcomes for the organisation, team members and patients.

What are the implications for practice?

Greater focus on ensuring teams have the necessary resources: including team development guidelines; access to training and team skill development; and opportunities for constituency-based evaluation.

THROUGHOUT THE HEALTH CARE LITERATURE there are regular assertions of the desirability, relevance and effectiveness of teams. While this trend has intensified from the early 1970's,[1] only a small proportion of articles empirically validate the effectiveness of health care teams, as the complex and dynamic nature of teamwork has challenged objective description and measurement. Teams are often symbolised as complex three-stage open systems, which utilise resources, communicate within themselves and produce outcomes.[2] A previous article summarised the characteristics of effective teams, in terms of antecedent conditions (input) and team processes (throughput).[3] This article reviews the range of outcomes of effective health care teams.

Patients commonly present to health care practitioners with several problems that have multiple causes. The extensive medical, nursing and allied health divisions of labour reinforce the need for interdependent care because no one professional can deliver a complete episode of inpatient care.[4] Quality patient care depends on a wide range of skilled professionals collaborating together in teams.[5,6] Health care professionals need to understand the potential contributions of their colleagues and have the skills to work effectively with them.[7]

There are many different definitions of teams. There is general agreement that teams contain a small, manageable number of members, who

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have the right mix of skills and expertise, who are all committed to a meaningful purpose, with achievable performance goals for which they are collectively responsible. Team members regularly communicate, solve problems, make decisions and manage conflict, while adopting a common approach in economic, administrative and social functioning. Each team member must have a distinctive and necessary role within the team.[3]

Defining team effectiveness

Traditionally, team effectiveness has been strongly related to the productive outputs of teams.[8,9,10] Additional social and personal criteria are also commonly measured in terms of team cohesion or viability and individual levels of mental health, satisfaction and well-being.[8,11-14]

However, team members and stakeholders commonly judge and prioritise effective team performance differently.[15] Team effectiveness can therefore be considered both a political and an empirical concept.[16,17] Team effectiveness is perceived differently by patients, team members and health care organisations.[18-20] While patient satisfaction is often used to indicate team effectiveness, it is difficult for patients to separate the benefits of clinical intervention from the benefits of teamwork.[21,22] Similarly job satisfaction and retention of team members may, but does not necessarily, reflect effective teamwork. The organisation's evaluation of teamwork often focuses on the efficient achievement of performance outcomes. However there is debate about the extent to which efficient care provision leading to improved quality of life for patients can be considered outcomes of effective teamwork and be measured.

These variations in defining effective teamwork challenge research design. Systematic reviews of the effectiveness of teamwork highlight inconsistent terminology and operational definitions of aims, teamwork interventions and outcomes, to the extent that many studies are excluded from the reviews, and conclusions are tentative.[23,24] In contrast, longitudinal studies purport to predict team effectiveness through correlating a range of input measures with team member and externally rated indicators of effectiveness. There are also intervention studies and systematic reviews of intervention studies which have compared team-based care with other forms of service provision to evaluate the benefits of effective teamwork.[25,26] To meaningfully compare the range of outcome measures reported, this review discusses outcomes in relation to organisational, team and individual benefits.[11]

Predictors of team effectiveness

Fifteen interdisciplinary treatment teams in three American public psychiatric hospitals were surveyed to operationalise Hackman's Model of Group Effectiveness.[10,11,14] Structural equation modelling of individual and team-level variables confirmed initial (input) and enabling (throughput) conditions that predicted effectiveness. Team effectiveness was best predicted by fulfilment of the team's task according to prescribed standards. Significant inputs included team members' presence at meetings, environmental support and external consultation. Enabling conditions included a combination of team cohesion and interdisciplinary collaboration.

Three interventional studies in the UK have operationalised a similar systems model of teamwork.[27] Relationships between team structure, process and effectiveness measures were examined in a study of 68 primary health care teams.[28] Four team processes (shared objectives, participation, quality emphasis, and support for innovation) were the best predictors of team effectiveness, accounting for 23% of the variance, with shared objectives having the biggest single effect. These four team processes also predicted team effectiveness in 103 primary health care teams and 113 community mental health teams.[29] The clearer the team's objectives, the higher the level of participation in the team, the greater the emphasis on quality and the higher the support for innovation, the more effective the team was reported to be by its members and external raters. Team compositional factors (high proportions of full time staff and longer team life)

Outcome measures of effective teamwork

		Individual benefits	
Organisational benefits	**Team benefits**	**Patients**	**Team members**
Reduced hospitalisation time and costs	Improved coordination of care	Enhanced satisfaction	Enhanced job satisfaction
Reduced unanticipated admissions	Efficient use of health care services	Acceptance of treatment	Greater role clarity
Better accessibility for patients	Enhanced communication	Improved health outcomes	Enhanced well-being
	Professional diversity		

also predicted effectiveness, as reported by external raters.

In a study of 72 breast cancer teams, high workloads and high proportions of specialised nurses positively predicted overall clinical performance using multivariate analysis.[30] Teams with greater professional diversity and longevity reported higher levels of effectiveness and patient-focused care. Conversely, a lack of clear leadership (including perceived conflict about leadership), as reported by team members, predicted lower levels of effectiveness.

Indicators of team effectiveness

The Box summarises the beneficial outcomes of effective teamwork described in terms of organisational, team and individual benefits.[11] While some outcome measures fit more than one category, they were allocated to the best fit. Each of the benefits is discussed below.

Organisational benefits

Several systematic reviews and randomised control studies have demonstrated reduced hospitalisation time and costs with health care teams. Specialist palliative care teams reduced the cost of care by reducing the amount of time patients spent in hospital.[26,31] Several American studies showed that terminally ill patients who received hospital-based team home care achieved overall average savings of 18% in hospital costs due to the increased utilisation of comparatively cheaper home care.[32] Team case management intervention for elderly chronically ill patients reduced days spent in hospital by combining earlier discharge with timely nursing home placement and better organised home support and care.[33] Total health care expenditures were 14% less than with individualised management. A secondary analysis of those patients who had dementia found a 41% reduction in costs following team case management. Increased costs for ambulatory and nursing home care were offset by fewer and shorter-stay hospital admissions.[34] At the end of the 27-month study there were more team than control patients living at home.

The costs of setting up primary health care teams and making regular home visits for a group of elderly patients with chronic illness were significantly less than the costs usually associated with hospitalisation and individual physician care.[35] Continuous team midwifery care in Australian tertiary hospitals reduced costs through shorter lengths of stay when compared with routine care.[36,37]

A comparative study of three Australian hospitals demonstrated a decrease in unanticipated intensive care admissions after the introduction of a medical emergency team.[38] This team responded quickly to calls from staff members for immediate assistance when patients deteriorated. Activity was compared over 6 months and revealed that one of the control hospitals had a higher rate of potentially preventable patient deaths. The medical emergency team intervened early to reduce unanticipated intensive care admissions without increased mortality.[39]

Teams have improved access for patients to health care. Twelve months after the introduction of community mental health teams in England, an increased rate of inception to care and prevalence

of treated psychiatric disorder was reported, along with reduced demand on hospital outpatient services.[40] These teams provided easier access to specialist and continuous care for patients with severe mental illness who may not have previously received this level of care. Primary health care teams introduced into one region in Sweden reported a rise in the overall number of patient contacts and a reduction in emergency visits, which they attributed to better accessibility and coordination of care.[41]

Team benefits

Nurses in England reported improved coordination in working together in primary health care teams. Service duplication was reduced and specialist skills were used more judiciously to streamline the delivery of patient care.[42] Patients reported more continuous care when there was a reduction in the number of staff with whom they came into contact in patient-focused teams in an American private hospital.[43]

Effective teams utilise health care services more efficiently. An audit of team-focused case managers' records highlighted that patients were referred more frequently and appropriately for medical evaluation, respite and day care. Team case managers had smaller caseloads within specified geographical areas. They made more home visits, conducted more case conferences, and utilised local community resources in a more responsive manner to patient crises.[34] Similarly, the management of breast cancer was improved by specialists working in multidisciplinary teams with a sufficient throughput of new cases each year.[44]

Effective teams utilise good communication strategies for the benefit of patients and staff. Specifically, members listen to each other, respect differences in views, and include patients and families in collaborative problem solving.[45] In three self-managed work teams in a rural American nursing home, enhanced communication positively affected the service to residents.[46] Team members described more positive interactions among themselves and with the residents when they participated in decision making.

In hospital teams with a good communication climate in the Netherlands, nurses perceived patients as more interesting and less dependent, while patients felt less isolated and displaced by their experience of hospitalisation. In contrast, in teams with poor communication, patients were seen as uncooperative and negative, and they were often avoided by staff.[47] Teams in which members engaged in more active problem solving performed better than those where problems were not identified or attributed to the wrong causes.[48] Team effectiveness was improved when team members openly questioned the current approach, explored opposing opinions or considered other aspects of the patient's problem.[49]

Teams that rated their effectiveness positively described high involvement of all team members.[42] Professional diversity of team members in breast cancer teams in England was positively related to team effectiveness.[30] A greater range of professional knowledge and experience provided team members with more opportunities for discussion and learning. As a consequence, teams reliably coordinated their services and, over time, improved their clinical performance.

Individual patient benefits

Several systematic reviews have reported enhanced patient satisfaction, acceptance of treatment and improved health outcomes following multidisciplinary team care for complex and chronic conditions. Patients who received care from a coordinated team in a designated stroke unit were more likely to be alive, independent and living at home one year after their stroke.[50] Coordinated multidisciplinary rehabilitation contributed to a 10% reduction in relative risk of adverse outcome for patients following proximal femoral fracture.[24] When compared with conventional care, specialist palliative care teams improved patient satisfaction and identified and managed more patient and family needs.[31] Community mental health teams promoted greater acceptance of treatment and improved satisfaction with care by both patients and their carers.[25] As a consequence, a team approach contributed to reducing the number of suicides and hospital admissions.

An Australian team midwifery approach resulted in more satisfying birth experiences with fewer adverse maternal and neonatal outcomes. Team-care women were more likely to attend antenatal classes and they were more likely to labour and deliver without intervention.[36] Mothers were more satisfied with the information they received and the opportunities they had to participate in decision making. In another study, continuous team midwifery care was also associated with a reduction in medical procedures in labour.[37]

Patients who were terminally ill and their carers, who received team home care in America, expressed significantly higher levels of satisfaction at 1- and 6-month follow up interviews.[32] While these patients were cared for at home for significantly more days, they had significantly reduced clinic visits compared with the control group. A different group of patients with chronic illness and functional deficits reported a higher mean number of social activities, fewer symptoms, fewer physician visits and slightly improved overall health after receiving care from primary health care teams and when compared with the control group of patients who only had access to a physician.[35]

Individual team member benefits

Individual benefits for team members have included a range of socioemotional benefits such as improved job satisfaction, greater role clarity and enhanced well-being. Team members in high performing self-managed work teams in an American rural nursing home reported that their ability to participate in work-related decisions greatly increased their job satisfaction and desire to come to work.[46] Nurses working in patient-focused teams reported improved job satisfaction as they were able to better match their skill levels with patient acuity.[43] Australian health care professionals reported greater enjoyment and job satisfaction from working in teams. They felt more competent and less uncertain and anxious about their work when they contributed to team outcomes.[51]

After the introduction of interdisciplinary teams, team members in an English primary health care trust reported increased understanding of the roles of other team members. They described more contact and discussion with each other, reflected in greater contributions of all members to written patient goals and reports.[52] Similarly, in Australian rural primary care teams, general practitioners reported sharing workloads with other health professionals which enhanced knowledge of their skills and reduced perceived isolation.[53] Individuals working in secondary health care teams in England reported higher levels of role clarity and social support than those working alone or in pseudo teams.[29] They described a sense of cooperation among team members that buffered individuals from the potentially negative effects of organisational climate and conflict.

Members of breast cancer teams in England reported significantly higher levels of mental well-being than in previous studies of cancer clinicians.[30] They shared problems and supported each other, and they reported a significantly more positive perception of their team's effectiveness across a range of performance dimensions.

Conclusion

The team approach to service delivery is not a managerial fad, nor an organisational ideal. Empirical evidence exists that the use of teams can improve both the quantity and quality of health care services. However, fewer consistent outcome measures have been reported than for defining input and process characteristics of effective health care teams. Given the complexity of teamwork, there are demonstrable difficulties in measuring the varying perspectives of team effectiveness. There is a strong need to measure a variety of organisational, team and individual factors as contributors to and predictors of effective teamwork.[14] A constituency approach is recommended to identify all major constituents and then determine effectiveness criteria for each constituency stakeholder.[28] This comprehensive approach suggests that effectiveness should be measured in terms of multiple indicators.

At the same time, there is increasing demand for applied research that will guide and improve management practice to enhance the quality and efficiency of clinical services. Human resource managers have realised that developing effective teams cannot be left to chance, because of the risks of under-utilisation of skills and information.[9] There is a need for reliable and practical guidelines to assist team leaders and members to evaluate their own health care teams. Team members also need to be educated about strategies to enhance and maintain their teamworking.

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