EVALUATION SUMMARY

Sep 2000

TEAMCare Health

COORDINATED CARE TRIAL

TEAMCare Health Coordinated Care Trial - Evaluation Summary, September 2000

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Queensland Government
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Health and Aged Care

Objectives

The purpose of this report is to summarise the results of the TEAMCare Health Trial for members of the Brisbane North Division of General Practice and Trial stakeholders, many of whom generously supported the Trial. Without this support, the Trial would not have been possible.

A number of the results described here have been summarised from the local evaluators', the AHEAD Consortium's, final report[1]. Particular reference is made to issues that may interest GPs and stakeholders. Some further interpretation of results from the perspective of Trial staff is also included.

The volume of purely statistical information has been kept to a minimum to enhance readability, but reference to the complete evaluation report for details of the analysis is encouraged.

Background

The TEAMCare Health Coordinated Care Trial sought to improve outcomes for patients in the community 65 years of age and over (or 50 years and over if Indigenous Australian) with chronic and/or complex health care needs by designing and testing a model of coordinated care that aimed to improve the health and well-being of Trial participants.

A total of 1039 'intervention' participants from within the boundaries of the Brisbane North Division of General Practice and 719 'control' participants, mainly from the Divisions of General Practice in Southern Brisbane were enrolled in the Trial. General practitioners (291), community service provider organisations, community-based health professionals and acute health care facilities contributed to the 'field testing' of the model.

The management structure of the Trial was unique among Coordinated Care Trials within Australia by virtue of the Trial Sponsor being a Division of General Practice. This structure meant design, development and decision-making processes during the Trial were highly participative and consultative with members of the Division being highly influential in the actual design of the Trial.

[1] TEAMCare Health Coordinated Care Trial: Final Report at Trial End.
Prepared by Australian HealthCare Evaluation and Development Consortium (AHEAD), April 2000.

Methodology

The Trial was quasi experimental in design using two non-randomised Control groups, one geographically separated group and the other, a smaller internal reference group. The intervention comprised a coordination model for the management of frail aged patients with complex needs. Patient needs were routinely reviewed and were assessed as having either High or Moderate needs. The aim of the intervention was to optimise the mix of services (general practitioner, other medical specialist, pharmaceutical, hospital in-patient services, community-based services, etc) so that the overall health status of the participant was improved through the best possible mix of services and resources within the current pool of funding.

The Participants

Trial participants:

- were 65 years or older;
- lived in the Northern suburbs of Brisbane (intervention group) or Southern suburbs of Brisbane (control group);
- had 15 services funded under the Medicare Benefits Scheme in the last 12 months;
- were prescribed at least two medications funded under the Pharmaceutical Benefits Scheme;
- had been admitted to hospital in the last year (or were at high risk of hospitalisation) and/or;
- required the use of two or more funded communityservices.

Guardianship laws in Queensland at the time precluded the inclusion of people with dementia or reduced cognitive capacity. Because of the predominantly service based criteria, other individuals who used few health services were also not enrolled.

The Intervention

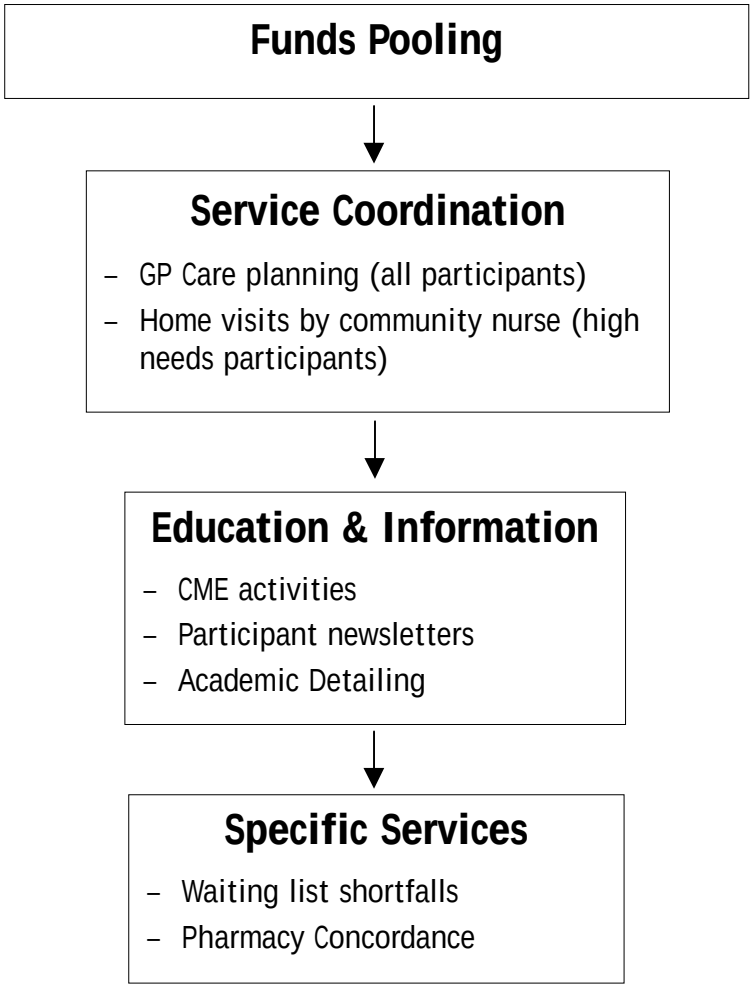
The intervention itself consisted of a number of inter-related approaches that can be described at four levels. Firstly, at the broadest level, funds pooling was thought likely to promote more flexible, effective and efficient services by (i) removing incentives which encouraged choices which were not clinically optimal; (ii) providing purchasing power which could be used to promote efficiency and; (iii) reducing duplication in program management.

At the second level, the service coordination model consisted of GP care planning, allocation to high and moderate needs groups and Service Coordinator visits for high needs participants. Participants were allocated to high or moderate needs groups based on their MBS usage and two criteria indicated by their GP: a score on the Dukes Severity of Illness Analogue and whether the condition of the participant was stable or unstable. Service Coordinators were registered nurses with extensive experience in aged care, seconded by several Community Agencies.

At the third level, population interventions were also carried out. Briefly, these were focused on education (e.g. falls prevention talks; CME activities; Academic Detailing) and information provision (e.g. participant and stakeholder newsletters).

Finally, at a more micro-level, individual interventions were undertaken through the funding of specific and short-term services for participants (e.g. home care while on waiting list, pharmacy concordance assessments). The multi-level intervention of the TEAMCare Health Coordinated Care Trial is illustrated in the following figure:

Figure 1: Interventions implemented during TEAMCare Health CCT.



Thus, coordination of care was not a unitary dimension, but aimed to assist Trial participants by influencing several levels of the 'system'. It is also unclear, and probably beyond the scope of the Trial evaluation, to distinguish which level or levels of intervention contributed, and by how much, to Trial outcomes.

Evaluation

Quantitative evaluation was conducted through the collection of functional, clinical, perceptual, service and cost data from participants by questionnaires, administered three times in the Trial – at the start, middle and end of the Trial. In addition, questionnaires were administered to GPs and carers. These findings were complemented with analysis of secondary data about medical services (MBS, DVA), other health care services (HACC, Domiciliary Nursing), medication use (PBS) and hospitalisations.

Qualitative evaluation consisted of face-to-face and telephone interviews and focus groups with participants, GPs, Community Service Providers, Service Coordinators, Trial stakeholders and TEAMCare Health staff at several times during the Trial. The purpose of this evaluation was to explore in depth, critical issues for each group.

Trial participant completing survey.

It was assumed that the needs profiles of the Intervention and Control groups at baseline were the same. In reality the health status profiles of the two groups differed and a series of risk adjustment strategies were conducted by the AHEAD Consortium during data analysis so that comparisons could be made more accurately.

Results of Trial Evaluation

Participant Exits

Over the time period of the study (approximately two years), 33% of intervention and 35% of control subjects exited. Overall, 11% of exits were due to death, 9% due to entry into residential care and the remainder decided not to participate further in the Trial. This exit rate approximated what was expected over the course of the Trial and was accounted for in sample size estimates.

Interestingly, the nursing home admission rates were significantly higher in the intervention group compared to controls (11.5% and 5.8% respectively). This may have been due to under-reporting in the control group, a greater availability of residential care beds in Brisbane North (the intervention group), or a sicker intervention group at baseline.

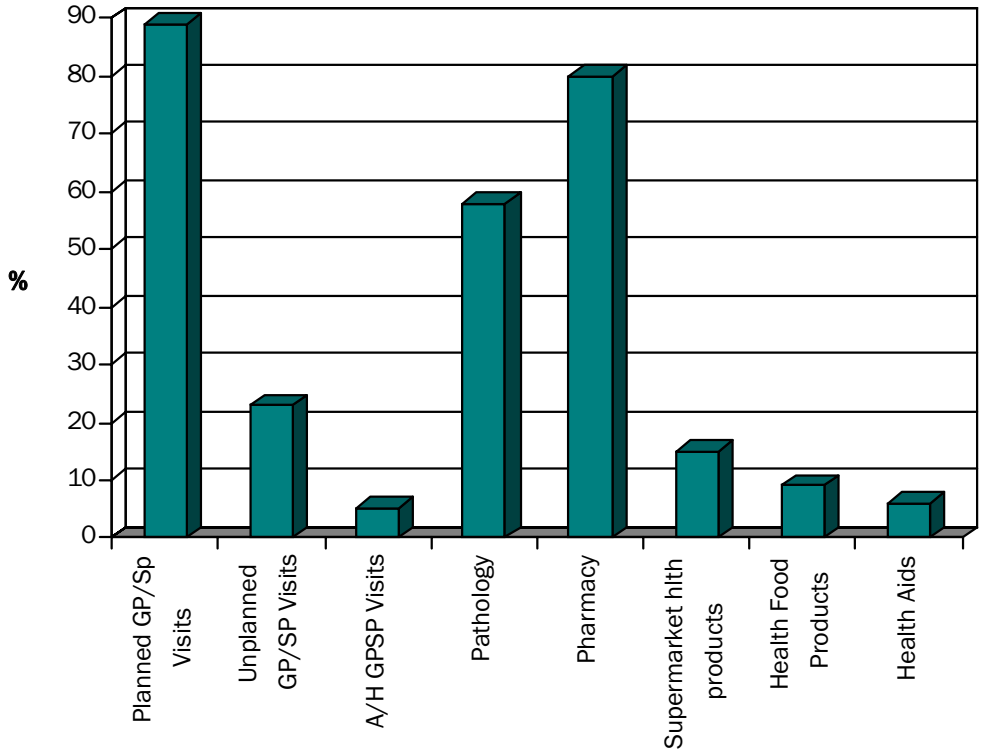
Functional Outcomes for Participants

Participant functional outcomes were predominantly measured via the SF36, a quality of life instrument administered to participants thee times over the time period of the Trial. The SF36 consists of two scales – a physical and a mental component score, both of which are divided into further sub-scales. Results showed an improved outcome in SF36 physical component and various SF36 sub-scales for a range of intervention subgroups and no significant differences between intervention and control groups in the SF36 mental component score.

Participant Service Usage

Most participants (89%), visited their GP or specialist an average of 3 times (median: 2) in a four week period with 26% of these visits being unplanned and 6% being after hours. Most participants (58%) also used pathology services and filled pharmacy prescriptions (80%), for each four week period. Fifteen percent bought health type products from supermarkets and 9% from health food shops and/or alternative health providers. Six percent of participants purchased health aids (e.g. walking sticks, support stockings etc).

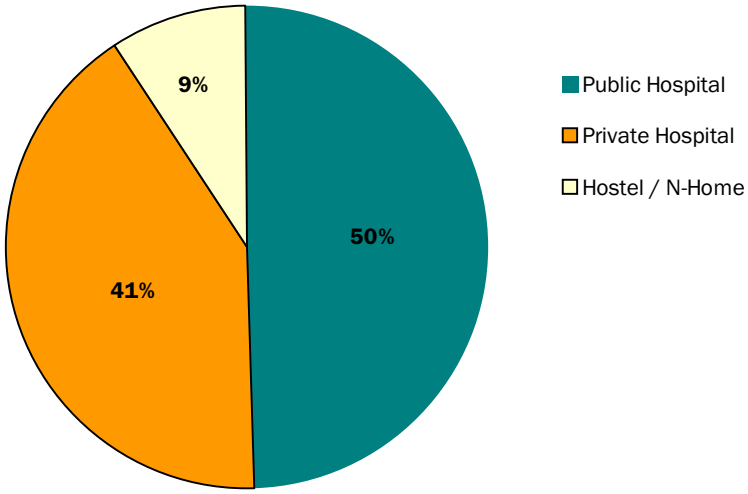
Figure 2: Percentage of participants using health-related services during four week period.



On average, most participants take 5.5 regular prescription medicines and 1.1 other medicines every day with less than one medicine on an occasional basis.

Of the participants visiting a hospital but not being admitted (25%), most were to outpatients clinics (77%) and 12% to Accident and Emergency. The percentage visiting private hospitals was 30%. These results were unaffected by being either Intervention or Control or with time. An average of 10% of participants spent a night in a hospital or other care facility during the preceding four weeks. Of these, 48% had been admitted to a public hospital, 40% to a private hospital and 9% to a hostel or nursing home. The average length of stay was 8.8, 7.7 and 16.3 days respectively.

Figure 3: Breakdown of admissions and for participants admitted to hospitals or care facilities during four week period.



Approximately 40% of participants visit a health professional (other than a GP or specialist) each four weeks, spending an average of $13.60 of their own funds. The professionals most frequently visited are the pharmacist, podiatrist, nurse, physiotherapist and dentist. Health professional utilisation and costs were similar between Intervention and Control groups and unaffected by the intervention.

Support services most commonly used by participants were government-funded home help (44.6%), Meals on Wheels (24.7%), private house cleaning (14.4%), private yard maintenance (5.7%), emergency call services (4.5%) and continence care (2.7%).

There were no significant changes to this service usage pattern over the course of the Trial.

Financial Outcomes

The major hypothesis of the Trial was that health would improve in the Intervention group within existing resources. In order for this hypothesis to be confirmed, it was necessary for efficiencies to be created in order to fund care coordination. This was not achieved however. On a per capita basis, health service utilisation per participant over the Trial period was $548 less than the Control group (mainly accounted for by a reduction in admission to public hospitals and reduced DVA costs), although this was not statistically significant.

When care coordination costs were included in the analysis however, the Intervention group cost more than 25% more than the Control group. This deficit could be attributed to a number of factors, not least of which was that recruitment into the Trial was less than forecast and the fixed costs were greater on a 'per capita' basis. That is, economies of scale could not be achieved without full enrolment. In summary, it appears that although some cost reductions did occur in the intervention group, they were not statistically significant and were not of sufficient magnitude to cover the additional costs of care coordination (and thus, not within existing resources).

The cost data indicates that the fund pool is an accurate estimation of the costs to provide health services under the current health system, although the fund pool was only 53% of the total health costs overall. If funds pooling was central to the success of the Trial, this proportion of pooling may have influenced outcomes. It should be noted however, that although only half the total costs were pooled, a much larger proportion of expenditure was tracked. For example, domiciliary nursing services, co-payments by participants and most private hospital costs were not pooled, but this data was collected and used in the financial analysis.

Participant Perceptions

All Participants

At all administrations of the client survey (at the beginning, in the middle and at the end of intervention), both intervention and control participants expressed a high rate (average 94%) of satisfaction that their current health care needs had been met by all health care visits in the last four weeks. The number of participants expressing dissatisfaction was very low for both groups in all administrations (average 1.5%). While this high level of satisfaction is promising, it is also consistent with reports that participants feared losing the health care support they were receiving and thus, may overstate satisfaction. An important consequence of this finding is that there is very limited potential for improvement in patient satisfaction by refining the current health care system.


TEAMCare Health Coordinated Care Trial
Evaluation Questionnaire by
A H E A D consortium
(Australian Healthcare Evaluation And Development)
Introduction
If You Need Help
Thank You for Completing this Questionnaire
Change of Address
Are these contact details correct?
YES - Please turn the page
NO - Please write the changed details ONLY below
Client survey.

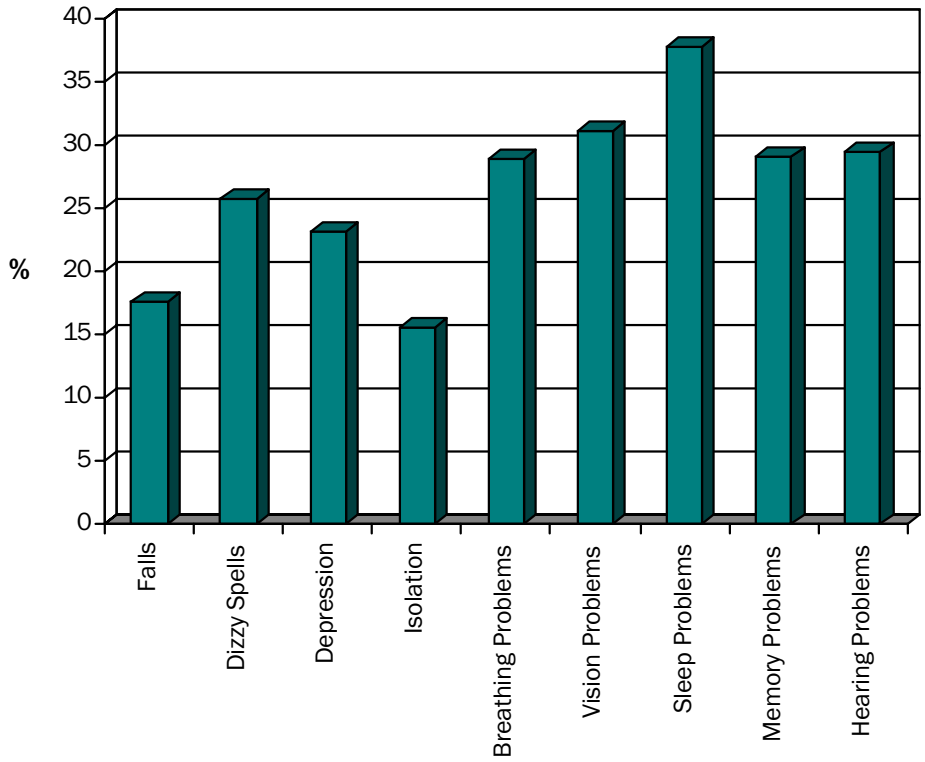
Those participants having difficulties receiving health care services (5.8%) suggested that waiting time for operations (26.8%), waiting to see hospital

specialists (10.7%), difficulty with access to domiciliary services (14.7%) and the cost of services (6.6%), were the main concerns. These results were averaged over the three survey administrations.

There were variable attempts reported by this group to stay in good health. Average to good responses were noted for nutrition (95.2%), exercise (50.1%), activities (65.8%) and socialising (58.3%). However, of concern was the high proportion of participants who experienced adverse incidents in the preceding four weeks. Many participants experienced a fall (17.6%), dizzy spell (25.7%), bouts of depression (23.1%), feelings of isolation (15.5%), breathing problems (28.8%), vision problems (31.1%), problems sleeping (37.7%), memory problems (29%) and hearing problems (29.4%).

Although some of these problems could be attributed to increasing age with a relatively poor prognosis (e.g. vision and hearing problems), others are certainly amenable to prevention activities (e.g. falls), education (e.g. sleeping problems) or treatment (e.g. depression).

Figure 4: Percentage of participants experiencing adverse events during four week period.



Perceptions of High Needs Participants

High Needs Participants believed that a significant change in their health care had occurred as a result of their involvement in the Trial. This was manifested in an increased level of interest by their GP in the management of their health and as a result of the TEAMCare Service Coordination function.

In particular, these participants cited the management by Service Coordinators of health-related issues on their behalf (e.g. liaison with Hospitals, government departments, referrals to other health professionals, provision of access to services such as 'Home Assist/Secure') as a major element of the improved care of their health. The majority were also aware that Care Plans had been developed for them and were satisfied with the continuing contact and regular visits by TEAMCare Health Service Coordinators and contact with their GP.

> *The outcomes of the Trial should be taken seriously by the Government and not just filed away.* *High Needs participant.*

Approximately 75% of the participants in the High Needs sample believed that the services provided during the Trial had assisted them to remain in the community when they were ill, rather than be admitted to hospital. A similar percentage believed that the additional services provided during the Trial by direct assistance from Service Coordinators and TEAMCare Health had assisted them to remain in their home rather than entering residential care facilities.

Perceptions of Moderate Needs Participants

Generally, Moderate Needs participants believed that there had not been a significant change in their health care as a result of their involvement in the Trial. Some had received some additional services since Trial commencement but were unclear as to whether this was the result of Trial activity or action by their GP during Care Planning. However, Moderate Needs Participants expressed satisfaction with the services provided by their GPs and a number mentioned increased interest and activity by their GP since Trial commencement.

General Practitioner Perceptions

Results from the GP survey indicated that more GPs in the intervention group reported that their ability to manage their practice and clients needs increased over the course of the study compared to controls in several ways. For example, GPs reported that their ability to arrange other health care services for their patients, their level of skills and knowledge in managing frail aged patients with complex

care needs, their ability to predict resources needed in the practice and their level of involvement in local initiatives to improved aged care health services, all improved between survey administration times 1 and 2.

Interviews conducted with a sample of intervention GPs revealed that they generally endorsed the concept and practice of Coordinated Care utilised during the Trial as a much more structured approach to the treatment of older persons with complex medical conditions living in the community, than had existed previously. They also perceived that their participation in the Trial was overall a positive experience for them as practicing medical professionals and that the Trial had reinforced their perception that the GP was the central and key figure in the management of the health of older people living in the community.

The Trial provided me with an opportunity to take a much broader view of the overall health needs of my older patients, particularly the influence of their home environment and social networks. *Trial GP.*

Also, GPs generally believed that the Trial had a positive impact on both High and Moderate Needs groups in that participants and their carers were advantaged. However, they believed that there was a significantly higher positive impact upon the High Needs group compared with the Moderate Needs Group, due to the allocation of a Service Coordinator who was readily available and accessible to assist and advise them on a range of issues relating to their health and daily living.

Carer Surveys

Although there were no significant differences between intervention and control for the total score on the Carer Strain Index (administered twice during the course of the Trial), by the end of the Trial, a significantly higher proportion of carers of control group participants had to make family adjustments (43% for controls vs 22% for intervention), work adjustments (26% for controls vs 9% for intervention) and felt completely overwhelmed (68% for controls vs 43% for intervention).

It is possible that these improvements in carer strain may have continued if the Trial had been conducted over a longer time period, but it is concerning to say the least, that over two thirds of carers of control participants and nearly half of carers of intervention participants, reported “feeling completely overwhelmed”. Disregarding comparisons between groups, these results confirm previous findings of the distress and burden experienced by many carers in the community.

Service Coordinator Perceptions

The collective perception of the TEAMCare Health Service Coordinators was that the Trial was of significant, positive impact on intervention GPs, community service providers and participants.

Examples of benefits to GPs included a receipt of 'up to date' information and advice on the community health network and the various services and forms of assistance that could be provided to their older patients, and the alleviation of a degree of their non-clinical workload by providing access to community health service network and utilisation of available services.

In terms of Community Service Providers, Service Coordinators felt that by the end of the Trial, these organisations had accepted Service Coordinators as legitimate and valued participants in the coordination of care for older persons with complex needs and recognised Service Coordinators had assisted CSPs in the reduction of service duplication, streamlining provision of services and in the transition from 'hospital to home' for SCP clients involved in the Trial.

With respect to participants, Service Coordinators believed that their availability as a single point of contact and regular assessment of their health, had improved the confidence and sense of security of High Needs participants. They also perceived that they had assisted many participants to make long-term changes to aspects of their lives and behaviour that would benefit their health and well-being.

Community Service Provider (CSP) Perceptions

Several CSPs indicated the Trial was confusing to many of their clients and others also believed that the nature and extent of client assessments undertaken by TEAMCare Health represented repetition/duplication of their services. However, several CSP representatives indicated that the Trial had positive benefits for the High Needs Participants at least in terms of planning, service enhancement and in-home care. CSPs generally indicated that the Trial had made no major difference to their internal operations or the nature of their services to clients.

Several CSPs questioned the fundamental contention of the Trial that GPs should assume the role of Care Coordinators as it was felt that clinical field staff of CSPs had for many years very successfully acted in a care coordination role. However, it was also stated that there appeared to be more contact and referral by GPs with CSPs regarding provision of services to patients by the end of the Trial.

Discussion

Quantitative and Qualitative Results

The most obvious conclusion that can be drawn from the above evaluation is that while qualitative results were very positive and suggest real benefits from Trial interventions, quantitative results were generally less supportive of these findings. Overall, participants, GPs, Service Providers and Service Coordinators reported high levels of satisfaction with Trial activities and perceived a range of advantages at both patient and system levels. However, there were few statistically significant differences between the intervention and control groups insofar as functional outcomes, cost data or service usage. There are a number of factors in Trial design and operationalisation that may have contributed to these seemingly incongruent results.

Firstly, the geographic division (rather than randomisation) between the intervention (Brisbane North) and control (Brisbane South) groups, resulted in different health needs profiles of the two groups at baseline. While variability was adjusted for statistically, it remains unknown to what extent the different groups contributed to non-significant quantitative results.

Secondly, the attrition rate in this group of older people with complex health needs was very high. Almost 30% of the cohort either died or were admitted to residential facilities during the course of the Trial. While this rate was expected, and power calculations revealed an evaluable sample size at the end of the Trial, larger enrolment numbers may have meant a greater number of significant results.

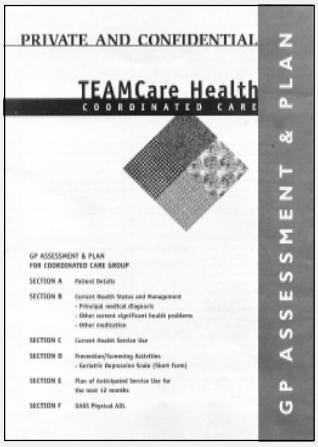
Thirdly, one objective of the Trial was to assist older people to remain in the community (if appropriate), rather than be admitted to a nursing home. This objective may have artificially increased costs in the Intervention group because the costs of keeping a person in the Intervention group at home are high, whereas comparable individuals in the Control group who entered nursing homes (where costs were not pooled), were exited from the Trial. Questions also remain as to whether the Trial would have been more or less successful if a greater number of funds had been pooled.

Finally, in regards to qualitative versus quantitative results, the period of time during which data was collected could be considered a constraint in terms of evaluating health outcomes. The duration of the Trial was less than two years and it is often difficult to assess the results of interventions designed to prevent adverse outcomes and improve health over such a short period of time. This can best be

illustrated in terms of 'trends', such as reduced hospitalisation costs in the intervention group, which while not statistically significant, may have become so if the Trial had further continued for a year or longer.

Identifying Participants who would Benefit from Coordinated Care

There are three broad issues to consider when developing the methodology for, and conducting research such as coordinated care trials. Firstly, the 'right' group of people need to be selected, and this concept has come to be known as 'the capacity to benefit'. The selection criteria used for the Trial were based on age, potential for hospitalisation and actual service utilisation, but questions remain as to whether participants selected on this basis were likely to benefit the most. Many GPs expressed regret about the exclusion of patients with dementia for example. They considered dementia patients as being an extremely vulnerable group in the community that had enormous capacity to benefit. Unfortunately, Queensland guardianship laws at the time prevented another person from consenting to Trial participation for these patients, although the guardianship laws have since been amended. GPs also felt that some of their patients had been disadvantaged by not being able to enroll in the Trial because they had not been hospitalised. GPs pointed out that keeping some of their patients out of hospital was based predominantly on their clinical skills and did not affect their capacity to benefit from coordinated care.



An alternative to selection may be to include patients identified subjectively by GPs as having a 'capacity to benefit'. Work completed on themes in the narrative summaries in the GP Assessment & Plans suggests that identifying patients with problems such as 'deteriorating condition' or 'reduced mobility' may be a more accurate way to identify risk than service-based utilisation. However, questions remain about the possibility that such subjective measures could be manipulated to ensure potential participants were enrolled – an issue of selection bias. Also, the practicality of staying within existing resources may be limited for individuals with high need but low resource utilisation, with the opportunity to reduce healthcare costs being over the long-term, rather than during the time-span of the trial.

The Right Intervention

If we presume then, that it is possible to select the 'right' group of individuals to participate in a trial, we then have to develop appropriate and targeted strategies with the objective of enhancing health outcomes. That is, the participant group and the intervention have to 'match' each other in order to achieve the desired outcomes of improved health, improved quality of life etc.

Again, it should be noted that the interventions carried out in the TEAMCare Trial were not unitary, but rather multi-dimensional, and aimed to influence the system at its broadest level right through to assisting individual participants. However, it is unknown which interventions were the most important. For example, the question of whether funds pooling within the Trial was successful or not, is a complex one. The purpose of pooling funds from a range of Commonwealth and State funding bodies was to enable the Trial to purchase services on the basis of the profile of people needing coordinated care. In this way, as stated in a 1995 Discussion Paper, "separate funding of individual programs could be replaced by the management of all services within each care stream to best meet the needs of people within that stream, within an agreed funding level". Trends suggested that some cost shifting did occur, with hospitalisation costs in the intervention group declining, although not significantly compared with the control group. However, these trends may have continued to a significant level over a longer time period. Also, Trial participants reported a very high level of satisfaction with the additional time spent by GPs assessing their care needs and Service Coordinator visits to the high needs group. Funds pooling made possible these particular interventions as well as the provision of specific services to individuals.

Measuring Outcomes

Following on from selection and intervention, the third issue to consider when developing a methodology for a Coordinated Care Trial, is measurement of health outcomes, which again, must be appropriate for both the sample and the intervention. In challenging measures such as cost and functionality as outcomes, the Trial was almost in a Catch 22 in that the readily available outcome measures to the Trial were those associated with cost (eg expenditure on MBS services) and functionality (eg scores scales such as the Older Americans Resources and Services which was used by TEAMCare Health). And if GP-identified themes are, indeed, the 'right' selection criteria, then cost and functionality may not be the most appropriate outcome measures to capture or identify benefits. Finally, some outcome measures are apparently contradictory, such as participants remaining in the community at high cost to the Trial, as discussed previously.

Service Coordinator Function

The perceived benefits to their health reported by High Needs participants, as compared to Moderate Needs participants, attest to the importance of the Service Coordinator in the TEAMCare model. The regular home visits, multiple referrals and reporting role to GPs carried out by Service Coordinators, resulted in a degree of alleviation of social isolation and renewed confidence by this group that they could stay in their homes. Additionally, the more than 1500 referrals to various health agencies and health professionals is indicative of the need for assessment in the home by someone who has both the expertise and the time to look at the 'big picture' of these peoples' situations. That is, while most of these High Needs participants were already receiving home-based health services, Service Coordinators were able to supplement these services by arranging for the supply of products (such as walking aides or incontinence pads), the installation of home modifications (to reduce the risk of falls), or the provision of respite care. GPs also reported the positive impact of Service Coordinators being available to provide assistance in monitoring the health of these older 'at risk' patients.

Development of New MBS Items

The Coordinated Care Trials conducted around Australia have contributed to the development of new MBS items which include care planning, case conferencing and annual health checks for patients 75 years and over. These items have recently been introduced by the Commonwealth Department of Health and Aged Care.

Conclusion

In conclusion, overall analysis suggests that TEAMCare Health made some quantifiable improvements to the health and quality of life of older people in Brisbane North. Just as importantly, the Trial also made contributions to the understanding and practice of coordinated care at both a local level and in a broader context. This was the result of the design and implementation of a range of innovative management and health service delivery strategies and interventions. It is hoped that future coordinated care initiatives will adapt design and measurement aspects of the TEAMCare Health Trial while building on successful elements of the intervention, to further improve health outcomes older people in the community.

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COORDINATED CARE TRIAL

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