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This report is part of the final evaluation report on Care Net Illawarra, one of the Australian Coordinated Care Trials based in the Illawarra. Each of the national trials addressed the same primary hypothesis:

Coordination of care of people with multiple service needs, where care is accessed through individual care plans, and funds pooled from existing Commonwealth, State and joint programs, will result in improved client health and well being within existing resources.

A summary of the key elements of the Care Net Trial is contained in Appendix 1 of this report.

There are 10 reports in this evaluation series:

Report Number 1	The Care Net Trial – What it was and How it was Managed
Report Number 2	The Care Net Intervention
Report Number 3	Care Coordination in the Care Net Trial (this report)
Report Number 4	The Use of IT in the Care Net Trial
Report Number 5	Client Experiences in the Care Net Trial
Report Number 6	The Care Net Trial – Impact on General Practitioners
Report Number 7	The Care Net Trial – Impact on Health and Community Care Providers
Report Number 8	The Care Net Trial – Impact on the Wider System
Report Number 9	The Care Net Trial – Value for Money?
Report Number 10	The Care Net Trial – The Evaluators Conclusions

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Report Number 3

Care Coordination in the Care Net Trial

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3.1 Introduction

The evaluation of the Illawarra Coordinated Care (Care Net) trial set out to establish whether better, or similar, health outcomes for people with multiple service needs could be achieved within the same overall budget, using pooled funds. This primary hypothesis anticipated a new model of care coordination in Care Net which addressed program boundaries and the perceived lack of coordination, through:

- funds pooling;
- a free-standing care coordination unit and independent care coordinators with budgetary control;
- general practitioner participation as co-agents in care planning; and
- budget neutrality.

Stated in terms of the primary hypothesis, the local evaluation of the Care Net Illawarra care coordination model set out to test whether the new model enhanced health outcomes from within existing resources. The secondary hypotheses referred to the likely contributing factors, which in turn were given local expression through the organisational model.

Care Net as an organisation is analysed in Report Number 1. Within that organisation, the care coordinators and their roles of planning, coordination and purchase of services to clients in the trial, formed the centrepiece or engine room of the new model. Within the trial version of the national hypotheses there was added the expectation that the model would drive broader changes within the wider system while maintaining budget neutrality.

The model of care coordination and how it was implemented is described in Section 3.3. The traditional care coordination elements are examined in the context of the trial, and the issues of recruitment and service integration (in the sense of integration in the local service system) have been included to the analysis.

Section 3.4 draws out the key points from this report which in turn are brought forward to Report Number 10 which is the Evaluators' Conclusion.

3.2 Hypotheses, Methods and Types of Data

This report concerns the centrepiece of the trial namely the nature and impact of the care coordination process as established by Care Net. The examination of the care coordination model as it was implemented is specifically relevant to hypotheses about the characteristics of clients, the quality of protocols, the extent of substitution, types of administrative procedures, and involvement/empowerment of consumers (ie national hypotheses 2, 4, 5, 6, 7, and 8).

The principal sources of data for this report are questionnaires and interviews conducted with the care coordinators at key points in the trial, summaries of surveys and feedback sessions specifically about the care coordination model, as well as documentary material from the trial such as copies of minutes of meetings, samples/examples of clinical protocols, samples/examples of care plans, and other relevant documents. The use of material gathered from the evaluators' interviews, surveys, questionnaires and other sources was assessed through participant validation procedures in meetings with care coordinators and trial management at which findings and appropriate interpretations were discussed.

Appendix describes the hypotheses in more detail (both the national hypotheses and the local versions) and the sources of data used by the local evaluators to test them. It also provides cross references to relevant sections of other reports in this series.

3.3 Findings – The Care Net Model of Care Coordination

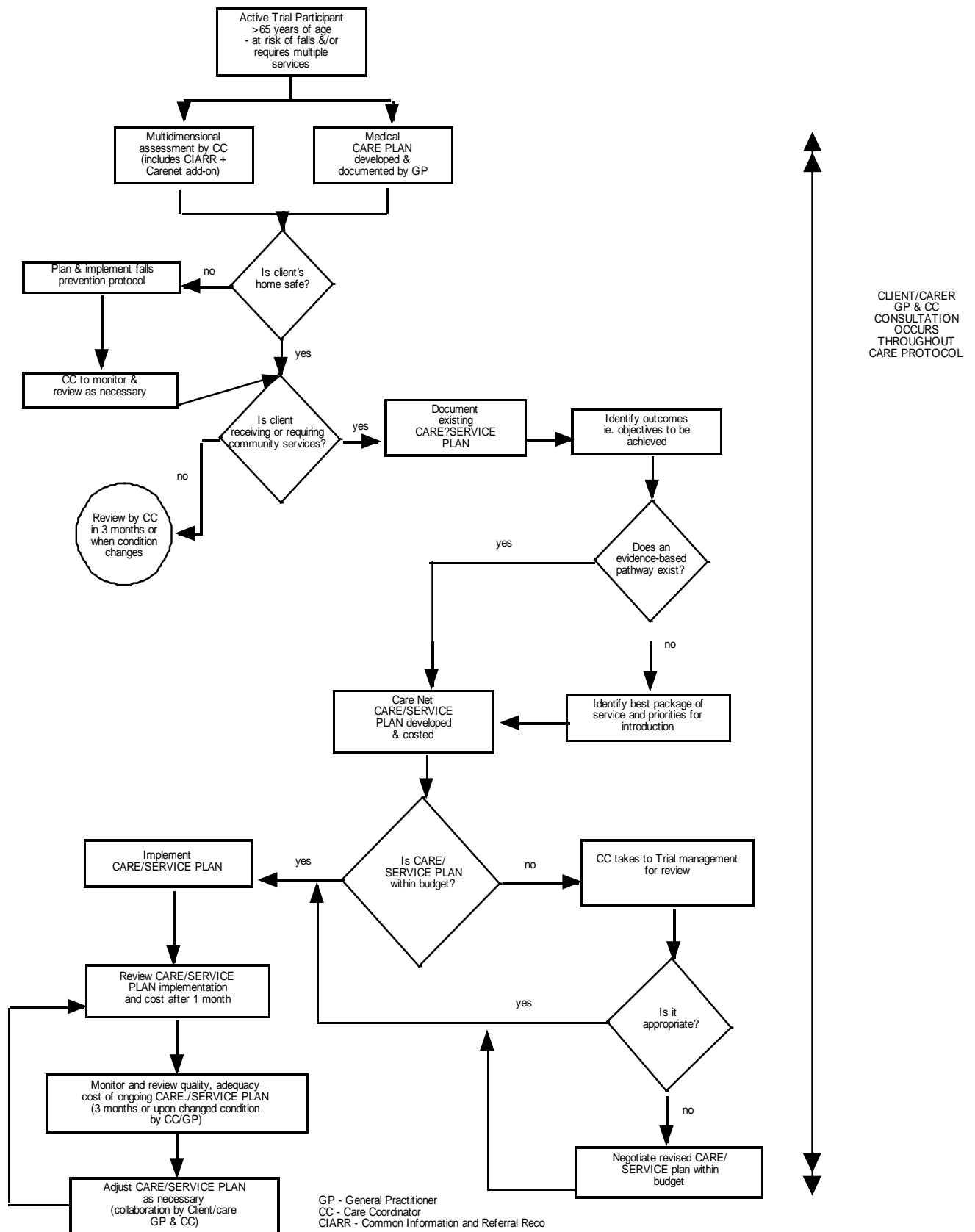
The evaluation sought to test whether the particular care coordination model adopted within the trial could improve individual client health and well-being within existing resources where an individual's multiple service needs are met through an individual care coordinator, a single care plan and a single pool of funds (Foulstone and Macdonald, 1999).

The trial's model of care coordination incorporated the following features:

- A single pool of funds (common to the coordinated care trials Australia-wide);
- A care coordination function delegated to individual care coordinators responsible to an independent care coordination organisation, Care Net Illawarra;
- Care coordinators with responsibilities for the assessment of clients and the purchase of services through uncapped individual client budgets;
- An information system to help improve access to information for service providers and trial management;
- Care coordinators working with individual general practitioners to integrate the purchase and delivery of the health and community care services to meet the needs of clients in the trial; and
- The aim of budget neutrality.

As illustrated in Figure 1, Care Net adopted one care protocol approach to all clients within the project. This approach assessed the home environment of all clients and developed a care plan for all clients based on an assessment protocol.

Figure 1 Care Net Illawarra Care Protocol



The definition and concentration of responsibility for performing core tasks is central to a care coordination approach. The trial (using its own terminology) adopted three main ‘agents of change’ in an attempt to give effect to the care coordination function:

- 15 care coordinators employed by Care Net;
- 102 general practitioners recruited from members of the Illawarra Division of General Practice; and
- a computer intranet system and programs for coordinators and general practitioners.

The following section describes in sequence the core tasks of the trial including recruitment, the care coordination functions, and the roles of the care coordinators, with observations on how tasks were undertaken:

- Recruitment to the trial;
- Assessment of client need;
- Care planning;
- Service purchasing; and
- The role of the care coordinators.

3.3.1 Recruitment

National Hypothesis 4 sought to test whether the characteristics of the clients to whom services were provided influenced the success of coordinated care. It is important to note that the local version of the hypotheses did not cover this question see Appendix 2. The implications of this shift of focus are described below.

3.3.1.1 Eligibility definitions

The primary hypothesis for the coordinated care trials clearly indicated that participants in the trial should have “multiple service needs”. There was, however, no definition of that terminology, leaving the various trials to develop their own approaches to eligibility for enrolment.

In the initial trial proposal the target population of the trial was defined as people:

- residing in the Local Government Areas of Wollongong, Shellharbour and Kiama;
- who were aged at least 65 years (apart from Aboriginal people aged at least 45 years); and
- who were at risk of falling, or with cardiovascular or respiratory conditions requiring multiple services.

This would appear at face value to be relatively straightforward, but the application of those criteria in the trial led to the selection of participants divergent in both functional capacities and health status.

The next step, which would have used diagnostic and assessment information to systematically select clients and then guide substitution decisions, was only partially implemented and not clearly documented. This had the effect of making systematic learning about the targeting of interventions more difficult to achieve.

3.3.1.2 Recruitment information form

The *Care Net Illawarra Recruitment Form for General Practitioners* (Table 1) asked general practitioners to nominate clients for the trial according to the following criteria:

- *If patient has symptomatic cardiovascular disease, symptomatic respiratory disease or has sustained a major fracture, as a result of a fall, in the past 12 months then he/she is automatically eligible for the trial.*

or

- *If patient has 2 or more ticks, (against the following categories) then he/she is eligible for the trial.*

Table 1: Care Net Eligibility Checklist

<i>Age > 65 (<45 years, if Aboriginal)</i>	
<i>Symptomatic Respiratory Disease</i>	
<i>Symptomatic Cardiac Disease</i>	
<i>History of Falls:</i>	
<i>Has fallen 2 or more times in past 12 months</i>	
<i>Previous hospital admission for falls in past 12 months</i>	
<i>Fracture as a result of falls in past 12 months ie femur, pelvis, spine, humerus, Colles</i>	
<i>Any one tick in above section, patient is automatically eligible – no need to continue</i>	
<i>Activities of Daily Living:</i>	
<i>Difficulty with walking</i>	
<i>Difficulty with getting out of chair</i>	
<i>Need help with showering and dressing</i>	
<i>Incontinence (bowel and/or bladder)</i>	
<i>Currently receiving community services</i>	
<i>Alcohol abuse</i>	
<i>Physically inactive/housebound</i>	
<i>Diabetic/Epileptic</i>	
<i>Chronic Conditions:</i>	
<i>Dementia</i>	
<i>Extrapyramidal disorders</i>	
<i>Cerebrovascular disease</i>	
<i>Other neurological</i>	
<i>Significant impairment of vision</i>	
<i>Depression</i>	
<i>Anxiety</i>	
<i>History of confusion/disorientation</i>	
<i>Medications:</i>	
<i>Polypharmacy (>3 medications)</i>	
<i>Psychoactive drugs (ie Benzodiazepines)</i>	

There was no core requirement that all participants be in receipt of multiple services, nor that multiple services would be required during the course of the trial. There was also no requirement that trial participants be either at risk of falling, or have cardiovascular or respiratory conditions. Whilst it could be interpreted that the list itself was a basic checklist of risk factors, the identification of two items on the list did not necessarily help to systematically identify someone at risk of falling or to assess the degree of risk.

Some general practitioners provided the minimal patient information required to determine eligibility for the trial. For example, one general practitioner identified that a client was eligible on the basis of 'age' and 'polypharmacy'. The patient also suffered from dementia yet this box was not 'ticked'. Whilst this additional information would not effect eligibility (as long as the client could give informed consent), it did influence the coordinators in assigning first assessment interviews to clients.

Not all general practitioners in the Illawarra area participated in the trial, and hence, some spouses of Care Net clients were not eligible for enrolment because they had different GPs. The care coordinators felt that this led to later difficulties in care planning and in the purchase of services.

Case A: A Care Net client was the carer of a non-Care Net spouse. The client was hospitalised during the trial and his wife, with dementia and requiring personal care assistance, needed to be placed in an appropriate institution. Places were unavailable and there was an expectation, by other service providers involved, that Care Net should purchase personal care for the spouse in the home.

Once the recruitment form had been completed by the general practitioner, the client was visited by a recruitment officer and further information was collected from the client. This information included carer availability, marital status, occupational status, pension or DVA status, health insurance status, living situation and demographic information. Minimal information was also elicited on current and past medical and community service provision.

An open-ended section, headed 'Health Profile' prompted the recruiter to document other information supplied by the client. Recruiters did not necessarily have health or allied health backgrounds and were not the care coordinators. Recruiters were not prompted to collect information on the health status of the carer, or spouse or relevant circumstances.

Case B: One client had a spouse caring for himself and a 40 year old incontinent son. On paper, the client was not identifiable as in high or urgent need and was not given any priority by the care coordinator, in looking over his/her lists for the first assessment interview and hence any priority in care planning.

3.3.1.3 *The implications of recruitment strategies*

The use of the checklist format for checking eligibility was a pragmatic response to both the time constraints in general practice and the tight timelines involved in getting the trial to a "live phase". It also represented a missed opportunity for the collection of better quality diagnostic information that would have been useful, if not essential, in client assessment and the subsequent targeting of interventions.

The other effect of the recruitment strategies was that there was a subtle shift in the emphasis of the Illawarra trial from the original hypothesis of the Coordinated Care Trials, namely a focus on coordination of care for people "with multiple service needs". The focus moved to encompassing prevention and broader health promotion for a "fitter" population, one that was moderately healthy but at risk. There is no trial documentation to suggest that there was a concomitant alteration in the model of coordination to be adopted and indeed, the model enacted was that conceived in the original submission to the Commonwealth (Care Net Illawarra, 1997a), not one based on the revised and more pragmatic aims that better fitted the selected participants.

The Trial Manager commented:

"The trial population cannot be compared to a service such as Community Options. Community Options is a reactive service catering for people with very complex needs. This trial has always had an investment in prevention and as such required a different population".

At another point the Trial Manager commented:

“.. the project development team worked on an innovative approach to coordinated care by focusing on harm minimisation and health maximisation strategies, that is, pro-actively reducing risk of injury and increasing individual awareness of their conditions will reduce the need for reactive health service crisis intervention”.

3.3.1.4 Recruitment and the need for care coordination

It was therefore possible to be assessed as eligible for the trial, and accepted into the trial, as either an active or control client, on the basis of an incomplete or inconclusive medical history and without evidence of ‘multiple service needs’. This left open the possibility that those selected might have no immediate need for care coordination.

Some general practitioners described (see data from GP focus groups in Report Number 6) nominating patients on the basis of the patient’s possible future medical or service needs. A few care coordinators felt that some general practitioners recruited on the basis that the patient was new to the practice and that an independent assessment and care coordination process would relieve them of some patient responsibilities.

This description of the uncertainties in the recruitment processes is confirmed by the quantitative analysis. The evaluators, in the Mid Term Report (Eagar et al., 1998) commented:

*“The overall conclusion is that the Care Net Illawarra cohort is not as healthy as the general population of older people (see SF-36) scores) but **are** healthier than the population of older people using community health centres, outpatients and hospital inpatient services (see FIM scores).”*

Case C: This Care Net Illawarra client was a widower in his late 70s with a chronic heart condition. The condition was adequately managed by medications and he displayed a singular determination to ‘manage’. When the interviewer spoke with him the first time he had just finished mowing his neighbour’s lawn and was about to visit the travel agent to finalise his plans for an overseas holiday. Over the course of three interviews he remained fit and well and managed a number of overseas holidays. He received no care plan.

Only 13% of clients at first assessment had high needs as measured by a tool developed by the local evaluators. 61% of the client population had mild to moderate needs and 25% of the population were described as low need (Eagar et al., 1998).

Care coordinators were not involved in the recruitment process. They received lists of eligible clients and met with general practitioners to assign priority for the first assessment interviews and care plans. At that meeting, the degree of diagnostic information varied for particular patients and would depend on the judgement of the general practitioner, and to some extent on the care coordinator, and their overall interest and/or perceived competence in health diagnosis and treatment.

3.3.2 Assessment of client needs

A systematic, comprehensive and validated set of assessment measures were applied in an assessment interview at the beginning of the trial (over a period of 6 months) and repeated throughout, either when indicated by a change in health status or circumstances of the client, or at regular intervals.

The assessment tools and processes used by Care Net received careful attention in the planning stages. It was anticipated that assessment would achieve the following (Eagar and Woods, 1999):

- care plans tailored to the needs of the individual;
- collection of information on attributes predictive of costs of care, to inform the cash flow for the management of the funding pool;
- measurement of outcomes ‘before and after’ the trial; and
- measurement of outcomes relative to the goals agreed for each person on six dimensions – self care ability, cognitive function, instrumental (domestic) function, social environment, carer availability and physical environment.

The Care Net assessment tool consisted of a battery of instruments designed to measure eight dimensions of the clients’ health status, level of functioning and environmental factors. These were identified as being those that both individually, and in combination, would drive the need for coordinated care and were known to be predictive of the cost of care. After the relevant dimensions were identified, a measurement instrument was selected for each dimension.

Table 2: Dimensions and tools selected for client assessment

Dimension	Tool or information collected
Health status	General practitioner medical diagnoses Medication data Use of aids and appliances Falls history Allergy, hearing and vision problems
Self perception of health status	Question to client (Australian Bureau of Statistics, 1992)
Self care ability (mobility function)	13-item FIM Motor Sub-scale (Granger et al., 1993) (Ottenbacher et al., 1994)
Cognitive function	Initial screen: Short-Orientation-Memory and Concentration Test (Wade, 1992) (Katzman, 1993) (Stuss et al., 1996) (Meiran et al., 1996) Further test: Mini Mental State Examination
Instrumental (domestic) function	Lawton’s IADL (Lawton and Brody, 1969)
Social environment	Health of the Nation Outcome Scale (SMI) – Item 9,12 (Wing et al., 1996)
Physical environment	Adaptation of NSW Health Falls prevention strategy (NSW Health Department, 1995)
Carer availability	Developed for trial (Eagar and Woods, 1999)

The dimensions and the instruments were selected by the Care Net Illawarra Clinical Issues Committee (Report Number 1). This group included representatives from general practice, rehabilitation medicine, geriatric medicine, nursing and occupational therapy. As much as possible, the instruments selected were already in routine clinical practice. Instruments were preferred if they were well validated, efficient and had demonstrated inter-rater reliability. In the event, tools were selected that met the technical criteria for all but one of the dimensions (carer availability), but this was not regarded as a problem given the nature of the data collected, which was factual rather than a rating.

In the second half of the trial a further assessment tool was added. *The Care Coordinator Assessment of Client Care Need (CCACCN)* was developed by the project team and based on a risk assessment tool. This assessment tool was completed by care coordinators and required them to rank clients according to high, medium and low need on a range of indicators (eg hospitalisations, use of support services, medication use, etc). The form was brought into use mid-way through the trial as a case load management tool for the care coordinators. It was also planned that the CCACCN would inform project management in assigning case loads to care coordinators, and generally monitor the appropriateness of care plans.

3.3.2.1 Care Coordinators' views of assessment measures

Some care coordinators commented that some of the measures used within the assessment package need fine-tuning to make them more appropriate to older people living in the community. For example, there were some difficulties with applying the 'goal' category to the HoNOS and carer scales. Care coordinators found the HoNOS hard to administer and the score not particularly helpful in guiding the development of the care plan. Care coordinators felt that the FIM scale was more useful in a rehabilitation setting than in the home. Indeed, during the wind down phase, service providers who participated in planning the reintegration of Care Net clients into mainstream services opted to use another assessment tool (the Barthel Index) rather than the FIM.

Overall, care coordinators felt that the Lawton's Instrumental Activities of Daily Living Scale was the most useful assessment measure. The next most useful measures from their perspective included the Care Coordinator Assessment of Client Need, the Home Safety Measure and the FIM.

Care coordinators commented on the usefulness of the 'goals' incorporated in 7 of the 8 assessment tools. They felt that goals were not generally helpful in care planning as they did not make allowance for the fact that, with the majority of Care Net clients, stabilisation of their conditions, or prevention of decline, was perhaps the optimal outcome.

In the Mid Term Report (Eagar et al., 1998), for example, it was noted that care coordinators expected little change in their clients on the IADL measure. Care coordinators expected no change in 98.7% of their clients on this scale. In fact in 65% of cases no change occurred between the first and second assessment. However, in 25% of the cases, whilst no change was a goal, functioning decreased. Only in 9% of cases, where no change was expected, did improvement take place. This figure of course reflects the fact that the majority of clients were not functionally impaired in the first place. However for the 8% of clients recording a moderate to severe IADL (instrumental functional impairment), the finding may reflect that the tool was inappropriate for use with this target population or that the care coordinators did not have the necessary experience to identify appropriate goals.

It had been expected that the assessment tools would be used in care planning and service coordination. However, it appears that the assessment data bank was never fully accessed or used in project management. The information was never analysed, for example, to assist management in the prediction of costs. The later use of the CCACCN was an attempt to achieve this goal, yet it may have been achievable with existing information in the database, had a useful reporting function been available.

For example, a five level scale designed to measure dependency or need for a service, based on assessment information, was developed by the evaluators midway through the trial (Eagar et al., 1998). The use of routinely collected data in this way may have averted the need for care coordinators to further assess their clients on the basis of a new tool.

Care coordinators in the second interview (conducted after feedback summarising the results of the self-administered questionnaire), commented that while the assessment tools were considered, by and large, appropriate, the layout and performance of the computer package *Care Manager*, and its successor, *Asclepius* (also known as MACS), meant that the collected information did not directly facilitate decision-making or care planning (see Report Number 4 on IT). Firstly, there was no summary box for overall scores which would draw attention to the needs of clients. Second, there was no comment box, either within the individual assessment tool or in overview. These particular problems were only marginally improved in the *Asclepius* version. Third, there was no immediate access to any medical diagnosis, apart from what the client told the care coordinator and the care coordinator would need to drill down into the program to recall this information.

The assessment database was certainly found to be useful in the evaluation of the trial, allowing the measurement of outcomes 'before and after' the trial, but only after considerable resources

were put into data quality checks and re-formatting. These were necessary as no line or output editing of the data was undertaken at any point throughout the trial.

3.3.2.2 *The SF 36 outcome measure*

The SF-36, as the one mandatory national outcome measure, was applied to clients and controls at three points during the trial but as care coordinators did not see reports on the scores for this tool, it was not used for either individual assessment or care planning.

Care coordinators did, however, administer the measure over the telephone to clients during the wind-down phase of the trial. Some care coordinators commented that the SF-36 was 'blunt and insensitive' for use in the home setting, and they did not feel that it would have assisted them. This is a finding consistent with other studies of the use of the measure in older people (McHorney, 1996). Examples given included the use of the word 'sick' in the questions – some clients were unsure whether this meant 'unwell' or 'vomiting'. They also commented that answers to the SF-36 were likely to be unreliable, given it was being administered in the context of the trial's wind-down when clients were unsure which services would continue, for what cost and for how long.

Data quality concerns arising from difficulties in administering the measure were also encountered by the local evaluators at the end of the trial when raw data from the final administration to the control group was only available two weeks before this final report was due to be completed.

3.3.2.3 *Assessment timing and location*

Clients were assessed at the beginning of the trial and a care plan was to be developed for each client. It was originally intended that assessments would be routinely carried out every three months, and/or when the client's condition changed. The expectation was that a change in one or more dimensions of the assessment should be reflected in a change in the services required. In the event, the frequency of the assessment was largely determined by the case load of the care coordinator and their evaluation of the stability of the client's condition/s and social circumstances. Some clients with low and stable needs were reviewed yearly - others, with similar scores on assessment tools, continued to receive a quarterly review.

It should be noted, however, that the initial three monthly review policy was determined without the benefit of the knowledge of either the care coordinators' eventual caseloads or the different dependency levels of clients. Since a number of clients required no services, care plans were not always compiled for each client.

Assessments were conducted in the client's home and data collected through both observation and interview. Depending on circumstances, this process included the participation of the person's family or carer. Initial assessments usually took between one and a half to two hours with re-assessments taking one hour.

A comment was made by care coordinators that assessment in the home was vital to an understanding of the person's social support and physical environment. Care coordinators also felt that it was important to observe a person's level of functioning within the home, as the observation could diverge from the client's own perception of their capacities and abilities. Care coordinators felt that general practitioners, in surgery-based consultations, may miss vital information on the client's functioning or social and domestic situations:

"Observing the interaction between the carer and the client I could see that there was a possible degree of domestic violence. The general practitioner thought it was a happy marriage."

3.3.2.4 Medical assessment

It is unclear as to whether medical assessment, as recognised broadly in the literature (Applegate, 1995), occurred within the trial. The Care Net documentation contained no evidence that participating general practitioners consistently undertook a systematic medical assessment of all clients. It may be that some did, but the data were not made available to the trial.

Medical Director, the computer program and only intervention with general practitioners which was widely applied to trial participants, did not prompt general practitioners to undertake a comprehensive geriatric assessment, apart from the prompts contained within the medication database. Given the trial population, a policy to perform such an assessment might have been expected to be adopted. *The Medical Director* application and its use by GPs is discussed for fully in Report Number 4 on the IT system and Report Number 6 on GPs.

There was some attempt to introduce clinical guidelines for specific conditions affecting a proportion of the trial participants. The evaluation found evidence that these guidelines were produced for two conditions (Congestive Cardiac Failure and Chronic Airways Limitation). These did not call for a broad medical assessment nor did they prompt for any re-assessment after a period of time. Once again, it may be that some GPs did follow these guidelines, but the data about how systematic such applications were either not collected or not made available to the trial.

Most care coordinators had no regular or automatic access to the client's medical history or medical care plan (conclusion from responses to the CC self-administered questionnaire). Although data were collected centrally from the GPs' *Medical Director* package, coordinators did not automatically have access to this information and there was no systematic reporting of this either. Despite initial plans, the trial did not demonstrate the capacity to electronically exchange and act on medical assessment information.

In practice, this information was collected by care coordinators from a mixture of sources (general practitioners, client, carer or personal observation), but the only diagnostic information systematically collected was that typed into a text field in *Care Manager* by the care coordinator. This was not available to the trial management, the care coordinators, or the evaluators in a form amenable to timely analysis and reporting (see Report Number 5).

In order to make the care coordination model work, these limitations could be overcome. The care coordinator usually took the initiative in contacting the general practitioner about a medical history for the client. Access to the information took place by phone/fax and sometimes during interviews with the general practitioners. Some coordinators, particularly those with health backgrounds, felt that there was no succinct summary of medical diagnosis or treatment in the *Care Manager* or in *Asclepius* (the new version of the care management software). This had implications for the input of care coordinators into 'substitution' decisions and the management of chronic conditions, as well as practical implications for care coordinators gaining an overview of another care coordinator's client's medical history and treatment.

Medication information was routinely collected in assessments by the care coordinators, however, the trial did not develop a systematic approach to the management of this information. This would have been useful information because the available data from the Health Insurance Commission may not have been complete (due to the HIC extraction process for patients who had reached the 'safety net') and data from *Medical Director* relied on the way that GPs used the package.

During the wind-down period of the trial medication information was forwarded to the client's general practitioner, along with information from the care coordinators on client compliance and information needs. Feedback through GP interviews and focus groups showed that general practitioners appreciated the information and, in some cases, initiated changes in the medication regimen or communicated further with clients.

3.3.2.5 Assessment and the electronic health record

The original plan for Care Net (Eagar et al., 1998) proposed the development and use of the Care Net Illawarra Electronic Health Record (Foulstone and Macdonald, 1999). It was planned that a file containing assessment and clinical information, including diagnoses and prescribed medications, would be up-loaded into an Intranet. The Electronic Health Record would contain information from the general practitioner, information on hospital admissions (including investigation results), assessment information and a care plan developed by the care coordinator.

This did not eventuate in the form in which it was planned (see Report Number 4 on IT and Report Number 8 on the wider system). The assessment data were uploaded, but access was limited and there were few incentives to use the system.

It was however recognised that the information on assessment would have had uses in a number of settings. For example, one care coordinator commented that the assessment information would have been of use to hospital staff in assessing and diagnosing patients:

“One lady was admitted confused to hospital. I happened to be there at the time and was asked whether this lady was always confused – by checking back with Care Net Illawarra I was able to say that she wasn’t normally confused. This altered the management of her condition. It would be good if the hospital staff could have the information handy.”

The patient assessment information may also have been of assistance to general practitioners in their input into the overall management of clients, particularly those with chronic illnesses. General practitioners are generally organised to respond to the acute and urgent needs of their patients (Wagner et al., 1996) and may have difficulty translating information about their patients’ functional disabilities into specific interventions to improve functioning (Moore and Siu, 1996). Yet although function is not typically evaluated in standard medical assessment, deficits in function predict mortality (Manton et al., 1993), and better predict patients’ outcomes following hospitalisation (Sager et al., 1996) than do admitting diagnoses.

The Client Information and Referral Record (CIARR) form was adapted for communication with service providers. It was anticipated that the CIARR-based form would include the assessment by the care coordinator and remove the necessity for repeat assessments (Foulstone and Macdonald, 1999). The CIARR itself is not intended to be an assessment tool, but rather a means of linking agencies into a referral network. The rationale is explained within the documentation of the NSW Community Care Assessment Framework (NSW Ageing and Disability Department, 1998).

In practice, the trial forwarded service providers relevant demographic and social information about the client and service information, but Care Net did not forward the outcome of the assessment. This did not reduce the requirement of other services to collect information, and may have been most relevant to health-related therapists, for example, occupational therapists who did their own follow up assessments.

It is not possible to measure the impact of the Care Net assessment on the number of service assessments by mainstream services. It could be assumed that the CIARR-based information exchange would replace some service provider assessments and certainly no service provider would need to establish financial eligibility or priority for a service (see Report Number 7 on health and community service providers). The issues of the assessment of the clients’ financial situation and the client contributions to the cost of their care plans are referred to in Report Number 5 on the clients experience.

3.3.3 Care Planning

3.3.3.1 General practitioners and the Care Coordinator

The proposal for the trial (Care Net Illawarra, 1997b) envisaged that the primary care protocol would include the notion of two distinct planning processes:

- the care plan – process carried out by the general practitioner
- the service plan – process carried out by the care coordinator.

Some 90% of clients received service plans. These service plans encompassed consultations, hospitalisations and pharmaceuticals purchased through the PBS as well as community services.

The care plan in reality became the major planning tool and this was written by the care coordinator with varying input from general practitioners. The majority (13) of the care coordinators worked with more than 5 general practitioners. Only one care coordinator had the close involvement of general practitioners in all care plans. Six care coordinators involved general practitioners in the development of some care plans and 3 care coordinators had some involvement of some general practitioners in the care plan. Two care coordinators reported minimal involvement of general practitioners in all their care plans (responses to CC self-administered questionnaire).

There was no standard protocol for the interaction between general practitioners and care coordinators. Only six care coordinators had established regular meetings with some of the general practitioners. One care coordinator commented:

“I speak to general practitioners on the phone and send care plans regularly. I try to meet with general practitioners if there are things I want to discuss or change.”

General practitioners on the whole expressed great support for the care planning accomplished by the care coordinators. 86% of general practitioners (general practitioner questionnaire) agreed with the statement that “the coordinator proposes effective care plans” and four out of five disagreed with the statement that the “care coordinator did not improve patient outcomes.” (see Report Number 6 on GPs)

Eleven of the 15 care coordinators who responded to the questionnaire felt that they had no access to the patient’s medical history or medical care plan. The important conclusion to draw out here is that the process of care planning was mostly a one-way street from the care coordinators to the GPs. The aim of putting together the medical and social dimensions in one plan was not achieved.

To some extent, the design on the care plans for the trial was directed by the capacities of the computer program for care coordination purchased for use by Care Net. *Care Manager* was imported with some modifications from the community services sector and was primarily designed for the use of case managers coordinating community services. The trial actually envisaged a broader add-on role, that is, linking community care with planned health care interventions. The computer program recorded the commissioning and purchasing of community care services (which may have substituted for institutional care), but did not allow for the incorporation of planned health interventions (which may have lead to other improvements in health and well-being). For example, there was no capacity to record prompts for self-management initiatives which could be implemented by the client (with education and monitoring by the care coordinator).

3.3.3.2 Service plans and practice guidelines

As mentioned above, clear diagnostic information and individual (medical) care plans were not systematically sought from the general practitioners.

There was much effort by the Trial Manager in promoting cooperation between the Illawarra Division of General Practice and Care Net to introduce 'best practice guidelines' for a number of chronic conditions including: chronic airways limitation (CAL), congestive cardiac failure (CCF), and diabetes. This list was developed after the recruitment information had been examined by the trial management, but without comprehensive diagnostic data, the number of clients with these conditions was not known. The initial trial proposal makes it clear that the aim was not to introduce protocols and guidelines until well into the trial itself.

The approach used was to adapt guidelines for care for selected health issues and to identify how care could be coordinated through an agreed understanding among general practitioners, care coordinators, hospital clinicians and allied health therapists. It was anticipated that members of these groups would work together using existing evidence based guidelines to define how care for specific health issues should be coordinated across the continuum of care.

Using the evidence in the guidelines as the basis, and specific local knowledge, it was expected that it would be possible to improve continuity of care by:

- having general practitioners, specialists and hospitals provide consistent advice to patients on health issues; and
- defining admission and discharge protocols to ensure that general practitioners provided agreed information to hospitals when referring patients for admission and that hospitals provided agreed information to general practitioners on discharge.

It was also envisaged that these activities would strengthen the role of general practitioners in primary prevention activities by developing joint activities between general practitioners, the Area Health Service, and care coordinators on the use of allied health staff (dietitians, podiatrists and counsellors).

A number of initiatives did occur. Best Practice Guidelines for the Optimal Management of CCF were produced as the result of meetings between general practitioners. The guidelines emphasise a number of points for the general practitioner and also defined the role to be played by the care coordinator, namely:

"The care coordinator provides: resource kit; record book; scales; arranges education session on CCF; informs general practitioner on all stages; reviews symptoms and weight record; reviews compliance with MD drug sheet" (internal trial documentation).

The intention was to work through a range of guidelines, learning about the process as the trial progressed. As the Trial Manager (Foulstone, 1998) commented:

"...the development process for protocols for chronic conditions has been one that has involved a slow but steady foundation building strategy. We commenced in September 1997 with focus groups of general practitioners to establish what it was they wanted to achieve for their patients and themselves. We then took that information to patient focus groups to establish patient's responses to their general practitioner beliefs and wants. ... As a test, Congestive Heart Failure was chosen to be the first condition tackled. Education sessions were then held with general practitioners to work through appropriate guideline development. The National Heart Foundation and local cardiologists were also brought into the process ... We now have 50 general practitioners and approximately 167 patients ready to commence a trial of those guidelines."

Other guideline-like work with GPs was characterised by attempts to more systematically respond to conditions perceived to be representative of major health issues for the population of trial participants, namely depression and medications use.

“ Additionally the trial has been involved with Professor X in encouraging general practitioners to join a national program for best practice in the treatment of depression using cognitive behavioural approaches. The trial has also closely worked with the general practitioner initiated medications for the elderly program and currently funds a pharmacist position in developing strategies related to medications.”

Throughout the trial the local evaluation team expressed concerned that these initiatives be implemented in a manner that would allow evaluation and systematic learning to occur. The resources, both from within the trial and the general practitioners, and those that were offered by the evaluators were insufficient for the task, and as discussed in Report Number 1, there were practical difficulties in following through the issues of scientific governance that were raised by the trial.

Consequently, agreement to implement guidelines and follow them through in a way that could have been evaluated was not achieved, and as the trial financial position was re-assessed, the need for more rigorous attention to this issue was brought to the attention of the Care Net Management Committee. There was little practical response to the problem from the trial's direct management, as the concern was less for evaluation than for the pragmatic concerns of managing the complexity of the trial. This meant in practice that care coordinators were encouraged to use the trial as a set of opportunities for offering a diverse range of responses to a diverse set of client needs. This was quite different to the original aims that emphasised a more targeted approach.

Because of the way these evaluation and documentation issues were managed in practice, it was not possible to find evidence that these initiatives were followed through, that recommendations were systematically taken up and useful learning passed on. This point is not meant to imply that no such activity took place, or that the model of care coordination was little more than delivering random acts of kindness, or that useful learning did not occur at all. It is meant to emphasise the resource constraints resulting from having to do too many things at once (on the part of the trial), coupled with the limitations of the evaluation tools, lead to difficulties in attributing change to the Care Net interventions (see Report Number 2 on interventions).

For example, with the CCF intervention, an education session was held with some patients and weight scales were delivered to some patients. There is no record of a resource kit, record book or accessible information from the regular reviews conducted by the care coordinators.

As well within the individual care coordinator and client decisions on the care packages, a number of other initiatives in the area of chronic disease management were instituted:

- Massage therapy was used for people in chronic pain;
- Tai Chi exercise was encouraged and Care Net provided assistance with the cost of classes and travel to the classes; and
- Hydrotherapy exercise was encouraged and Care Net provided assistance with the cost of classes and travel to the classes.

The trial had no way of systematically and independently identifying and collecting data on the effects of specific interventions on the clients, in spite of a relatively sophisticated information system. The system relied on the individual initiative of the care coordinator and the general practitioner. There was no attempt to identify suitable matched clients from the control group and no strong desire to implement interventions in ways that allowed them to be evaluated.

3.3.3.3 Internal reviews

Individual care coordinators commented on the beneficial effect of the various interventions on individual clients and there was a willingness, although spare capacity, to review the interventions more systematically. At various times, care coordinators and trial management undertook surveys of clients in an effort to internally evaluate the effects of interventions.

Trial documentation obtained at the wind-down phase revealed that reviews were made, data collected and working groups formed to look at:

- Massage use;
- Dressing gowns (purchased and distributed to CAL sufferers);
- Hospital admissions;
- Substitution working party;
- Depression;
- Cardiac failure;
- Airways limitation.

It was clear that, without narrower targeting, the original plans for the Care Net initiatives with best practice guidelines and management of chronic illness were too ambitious, particularly within a two year framework. There is much evidence in the literature on the slow lead time for innovation in this area (see Appendix).

The evaluation, understandably, cannot detect any direct impact of these trial initiatives. Overall, the trial showed no impact on outcomes as measured by differences between the intervention and the control groups.

In Report Number 9 we assess outcomes for clients in four of the major diagnostic groups included in the trial – circulatory diseases (one of the target groups for the trial), diabetes, musculoskeletal conditions and respiratory conditions (another target group for the trial)¹. Outcomes were assessed through comparison of a client's first and last scores of the: Blended Needs assessment; FIM assessment; Self-rated health assessment; Social Function assessment; IADL (domestic) assessment; and Cognitive Function assessment

In general, clients with diabetes or musculoskeletal conditions (conditions that were not specifically targeted in the trial) had a worse outcome than those clients with circulatory diseases or respiratory conditions (conditions that were targets for specific interventions). The only exception to this general trend was for cognitive function where all clients experienced improved outcomes. However, there were some exceptions to a picture of general decline. Clients with respiratory conditions rated their health as worse than any of the other groups (at first and last assessment) while clients with circulatory diseases and diabetes experienced lower cognitive function (at first and last assessment) than the other groups.

The outcomes for each group were about the same on most measures, although the musculoskeletal group declined a little more than the others on five of the six measures. The only exception was for the IADL measure, where the circulatory and respiratory groups experienced the most decline.

¹ See the Report 5 for a caveat on the quality of the diagnostic data.

In summary, the Care Net interventions did not result in any discernable improvements in health and well-being status for trial clients. Neither did the trial help to maintain clients at their entry status – on all measures, health and well-being declined. This is not an unexpected finding given the target population. But it is a disappointing result given the trial's focus on prevention and early intervention.

It is reasonable to speculate that, if the trial had gone on longer, it might have demonstrated a return on its investment in prevention and early intervention. The available evidence does not support such speculation. The 'exit' rate in the trial – due to deaths and admissions to residential care – is such that it is unlikely that the "investment" in the current cohort would ever have "paid off". Furthermore, given that the trial had limited (if any) impact on the broader health and community care systems, it is doubtful that the Care Net approach had any "ripple effects" in preventing illness and disability in the wider community.

3.3.3.4 *Client and carer involvement in care planning*

The most common example cited by care coordinators as evidence of client participation in care plan decisions was that clients must approve their care plan. Interviews with clients supported the care coordinator view that clients and carers had input into the care plans.

There were, however, examples of clients not accepting care plan recommendations, or only accepting them after a period of time. One case involved a recommendation for rails at the rear of a house. The client only accepted the 'good sense' of the recommendation after the trial had ceased purchasing home modifications for clients. The second example concerned the recommendation that a client pay for the rental of a telephone-alarm system. The initial care coordinator recommendation was not accepted by the client for about one year, during which time the client experienced a number of falls at home and alone.

Care coordinators asked clients about their overall 'goal'. It was reported in our mid-term report that the use of the client 'goal' within the process of 'care planning' generated some controversy amongst the care coordinators. According to the Project Manager an explicit process was established to ensure that the goal was 'owned' by the client:

"The current situation is that the participant is to set the care goal in their own terms. The care coordinator is then to work with the participant and the general practitioner to establish the barriers in achieving those goals. The interventions that make up the care plan are to be designed to reduce the impact of those barriers. The process should develop very individualised care plans (Foulstone, 1998)."

Both the participants and the care coordinators were acknowledged as having some difficulty with the approach to care planning.

"Some participants set what appear to be unrealistic goals however it is believed that compliance to medical, pharmaceutical and social interventions will be higher if the participant owns the process. It is also believed to be more likely that care coordinators and general practitioners will provide more appropriate responses to individual differences if they understand the participant's perspective (Foulstone, 1998)."

One care coordinator said that some client goals (for example, "fly to Italy to visit my friends") were unrealistic goals that would contribute little to the development of a care plan. The alternative perspective, and the one adopted by the Project Manager, viewed this goal as an opportunity to engage the client in a discussion on various approaches that would enhance, say, mobility. The Project Manager was emphatic that all goals would be the clients' and stated in the clients' words. This was not what had been intended by the clinical group who designed the assessment instrument. The initial intention was that the 'goal' be the outcome considered by the assessor to be the best possible, achievable outcome. The new interpretation given to the term 'goal'

subsequently might have little direct relationship to the service plan and there continued to be varying interpretations given to the term 'goal' by the care coordinators.

3.3.3.5 *The cost of care plans*

The care coordinators, at the start of the trial, were not given any guidelines on total expenditure levels for individual clients or for individual services. They were informed of the purpose of the trial and given information on the overall expenditure savings needed to make the trial viable. They were also asked to bring to the attention of the executive any items they considered to be of high cost.

The Management Committee was informed in the latter part of the trial that capping of care plans had been introduced. However, none of the care coordinators responding to the questionnaire identified any particular 'cap' on care plan expenditure. Nine care coordinators were of the opinion that no cap had ever applied to care plans. Of these 9, 3 coordinators commented that they had relied on peer review for expensive care plans. Another 3 care coordinators commented that Care Net management monitored expensive care plans. Two care coordinators felt that there had been no changes made to the amount they could spend on care plans.

"I'm not sure what is meant by expenditure 'capping'. If expenditure was above a certain level we approached the team leader or project manager to discuss case. We also had peer discussion within groups. We also aimed to provide services that linked in with clients goals and care plan which was also provided to general practitioner for input/approval/advice."

"Never officially capped."

"Some participants had services cut they were genuinely benefiting from eg massage therapy. Cuts to lawn-mowing services may also mean that some clients may attempt to mow their lawns themselves .. cutting services has also caused some participants worry, especially with regard to other services that remained in place."

There was no overall limit on the cost of a care plan or on any individual items within the care plan. There was an understanding that high cost items would be discussed with the project executive.

The aim of this degree of flexibility, according to trial management, was to develop individualised care plans. The Trial Manager comments (Foulstone and Macdonald, 1999):

"The current situation is that the participant is to set the care goal in their own terms. The care coordinator is to then work with the participant and the general practitioner to establish the barriers in achieving those goals. The interventions that make up the care plan are to be designed to reduce the impact of those barriers. This process should develop very individualised care plans".

In the questionnaire administered in August 1999 care coordinators were asked to give the cost of their most expensive care plan in the last month. Nine care coordinators had spent less than \$1,500 on their most expensive care plan for the last month. Two care coordinators spent between \$2,000 and \$3,000. Two spent over \$3,000 on their most expensive care plan while 2 care coordinators did not answer the question.

There were a couple of one-off purchases for clients that were noted by the evaluators. One was mentioned previously in the Mid-Term Report – the purchase of cruise control for the car of one client. The Project Manager noted:

"The cruise control was for more than social mobility and isolation. The individual was a "Gold Card Veteran" who suffered extreme back pain after driving a short period. The fitting was permitted to relieve the back pain/driving issue so that his mobility and social contact was not negatively effected. I have noted this case and plan to follow up with a review of impact" (Foulstone, 1998).

It must be acknowledged that there were different perceptions between trial management and care coordinators on the amount of financial information available to care coordinators. As mentioned previously, it was only with the introduction of the CCACN that the Team Leader felt that she had some capacity to relate the cost of the care plan to the level of client need. Feedback was given to individual care coordinators through the weekly team meetings that were instituted in the second half of the trial (interview with trial management).

The Trial Manager, however, comments:

“We use a software package, PowerPlay, as our first level of inquiry. This package sets the data up in a user-friendly form and is updated at least every two weeks, sometimes weekly. It provides the ability to develop information models to look at specific performance or service utilisation.... These models can be at the global level of overall service usage or they can be at the level of individual participants, care coordinators, general practitioners, hospital DRGs, PBS useage down to specific drug types or combinations of all the above plus plus plus. I currently have a minimum of 100 different models I can call upon at any time for the latest information on a wide range of issues. The software is also available to any staff member who wants to use it. A significant number do so, including planning staff, administrative staff and the Chair of the Management Committee. With the new administrative structure of Care Coordinators information from PowerPlay is used in budget decision making ... (Foulstone, 1998).“

Given the more general constraints of the limited time and the capacity to analyse information that existed within the trial, it was clearly not seen as part of the culture of care planning that was encouraged. It was also not within the skills and expertise of busy care coordinators to access computer programs and interpret the information.

The costs of care plans exceeded the amount spent on participants in the intervention group receiving mainstream services. Across the 26 months of the trial, average costs for three of the main services used by clients (inpatient, MBS and PBS) exceed that for the control group by an average \$248 per person (see Report Number 9). When the costs of the trial itself are taken into account (ie the costs of care coordination) Care Net sustained a deficit equivalent to \$1,260-\$1,991 for every client. As well, there were no demonstrable improvements in clients' health and well-being relative to that of the control group, participating as they did in the mainstream health and welfare sectors.

3.3.3.6 Substitution: private for public?

The trial made extensive use of private services from outside the domain of the contributors to the funds pool (ie, in particular not IAHS Community Health and not Home Care). This was the major local divergence from the original National Hypothesis 2.

These choices in practice meant that funds pooled on the basis of a fixed full average cost structure were then used to pay for services provided at a much 'cheaper' marginal cost. The Commonwealth required agencies to contribute to the fund pool at full average costs and those that did (IAHS community health and Home Care) could not 'compete' with other providers who could offer services at marginal price. Nor could community health easily restructure to accommodate a lower level of 'buy back' from Care Net. Non-pool contributing services could more easily and more flexibly, 'add on' more services at marginal cost. The fact that the fund pooling methodology meant that there could never be a 'level playing field' was not understood at any level within the trial.

Care coordinators were quite clear in their responses to queries about the reasons for private service utilisation:

- *Community health was inflexible in the type of staff available to attend a client. Community health only employed registered nurses who first, cost more than an assistant in nursing (AIN) and second, would not*

do the range of tasks needed for the client. For example, a registered nurse could not make a bed, vacuum, cook a meal and change a dressing whereas an assistant in nursing (AIN) could do all and the cost was significantly less. From the client's perspective, they only needed to deal with one service provider rather than two or three. From the trial perspective, the AIN service was more cost efficient and there was no evidence whatsoever that quality suffered. (Community Health services in the Illawarra do not employ AINs).

- Community Health and Home Care employed casual workers to service Care Net Illawarra clients and therefore continuity of service provider was less than that provided through the private sector.
- Community Health and Home Care could not guarantee an appointment time to the client. There was an 1 hour window on either side of the appointment time. This was a major inconvenience to some clients and the care coordinators, as their advocate, would seek to change the service.
- The response time to a request for a service continued to be better in the private sector. Requests for services on a Friday afternoon, particularly on discharge from hospital, could not be responded to by Community Health. There were designated times for intake in Community Health.

All care coordinators had examples of the “better” and cheaper service available through the private sector. When asked to extrapolate from the trial to possible improvements to mainstream services, one care coordinator suggested:

“More flexibility, reliability and more pro-active response rather than reactive responses. Reduced price services – home care is 50% more expensive than private services – why is this so?”

Overall, there was a net transfer of funds from the public to the private sector of almost \$1 million. As Care Net had limited influence over the expenditures committed by doctors this was a significant proportion of the trial's discretionary expenditure. The issue of differences in provider costs is discussed in Report Number 7.

3.3.3.7 Discharge care planning

There are five public hospitals within the area of the trial: Wollongong, Shellharbour, Port Kembla, Bulli and Coledale.

The approach to discharge planning adopted by the trial changed as it progressed. Originally care coordinators were expected to follow up hospitalised clients, liaise with hospital staff and general practitioners and assist in the development of a discharge plan. The Care Net Illawarra Hospital Presentation Protocol (Care Net Illawarra, 1997b) p13 states:

“Care Coordinator liaises with client/carer, hospital, staff, specialist and general practitioner to coordinate client discharge ... post discharge Care/service plan set up and budget reviewed ... client discharged.”

A number of difficulties were encountered by the trial. Clients of the trial were identified each night by down loading information from the IAHS computer. But there was no automatic notification to the hospital at admission of the client's status. Identification of trial clients required the care coordinator to physically locate the patient file and then insert a sheet of paper in the patient file identifying the client as a trial participant. This identification in and of itself might mean very little to individual hospital staff. The trial was only dealing with small numbers of people and the implications of the resources available through the trial to assist the individual client were not necessarily recognised by individual hospital staff.

There was no formal protocol developed between the different hospitals in the area and the trial with regard to clients. The role of the care coordinator in discharge planning, therefore, relied at the start of the trial on the initiative of the individual care coordinator and to some extent their perceived authority within the hospital by individual hospital staff. There was therefore no legitimised right for care

coordinators to see patient medical charts and no legitimised right for care coordinators to be consulted about discharge plans.

Care coordinators from a nursing background fared better within the hospital setting than their colleagues with no knowledge of hospital protocols and processes and no legitimacy bestowed by their professional background. Some care coordinators found that they could spend a considerable amount of time at the hospital without any real impact on client's length of stay or discharge plans. Cooperation was always forthcoming from the hospital discharge planner. However, the discharge planner was only involved with some clients and only towards the end of the hospital stay.

In the last 6 months of the trial, the role of discharge planning was given to one coordinator with a nursing background. This coordinator was able to ask for, and receive, legitimacy within the hospital and some personal recognition on the wards. It was recognised, for example, that she could view patient charts and records, make appropriate interpretations of that information and interact with nursing staff in seeking outcomes for clients. She was consulted about plans for discharge. Her involvement and influence, however, depended upon her physical presence on the wards. This coordinator would have responsibility for the development of a care plan for discharge, briefing the care coordinator with responsibility for the client and the general practitioner. The client's personal care coordinator would then resume responsibility for assessment and revision of the care plan.

3.3.4 Service purchasing

3.3.4.1 The care or 'service' plan

As mentioned above, the trial proposal envisaged that a care plan and a service plan would be developed for each client.

To some extent, the design of the care plans for the trial was directed by the computer package used by the care coordinators. *Care Manager* was imported with few modifications from the community services sector and designed for the use of case managers coordinating community services.

The trial envisaged a broader role – linking community care with health care – and most importantly, the ability to substitute both within and between the different approaches and services. This all aimed to achieve the best possible outcome for client and carer. A more detailed discussion on software is contained in Report Number 4 on the IT system.

Care coordinators were asked (in the August 1999 questionnaire) to provide descriptions of care packages developed for high, medium and low need clients.

Examples given by care coordinators of care packages for a **high need client**:

D: This client lived by herself and had no family members nearby. She suffered from osteoarthritis, had poor circulation and couldn't stand up for any length of time. Prior to Care Net Illawarra, she was receiving help with house cleaning and she continues to pay for this service herself. The care coordinator assessed that this client was at risk of falling (and indeed had already suffered a bad fall) and purchased, with the client's consent, a monitoring alarm (\$390 installation costs - the client herself pays the monitoring fee). The care coordinator asked the Department of Housing to install rails in the house. The care coordinator purchased meals, seven days a week. After discussion with the general practitioner, a masseuse comes to the house every fortnight (\$40 per visit). The geriatric assessment service undertook a physiotherapy assessment and a mobility aid was ordered. The client is also visited by a nurse from community nursing thrice weekly (\$34.00 per week) and every four months the client visits a private podiatrist (\$40 per visit). From time to time, depending on the client's health, Care Net Illawarra provides assistance to this client with shopping and visits to day care. The care coordinator feels that this client would probably need placement in a nursing home when Care Net Illawarra ceases operation.

E: This client lives with her extended family. She is an insulin-dependent diabetic and suffers chronic congestive heart failure. She has a lung capacity of only 50%. She has dementia and hallucinates. She is incontinent. The following services are purchased by Care Net Illawarra: delivered meals; fortnightly housekeeping by Home Care; personal care by Home Care five times a week; weekly home-based respite care; the hire of an oxygen concentrator and the use of a Webster Pack from the local pharmacy.

Examples given by care coordinators of care packages for a **medium** need client:

F: This client was considering moving to a retirement village. She has however a strong emotional attachment to her own home and the care coordinator believes that the Care Net Illawarra support has enabled her to continue to live there. The client is in her early 80s and suffers with osteo-arthritis, osteoporosis, chronic venous insufficiency and incontinence. She recently had a prolapsed bladder and a colonoscopy. She receives assistance with general housekeeping for one and half hours each fortnight. An occupational therapist assessed her needs and Care Net Illawarra purchased some tap turners.

G: The care coordinator assessed that this client was in chronic pain and was depressed. She was provided with help with housekeeping each fortnight. The care coordinator urged the general practitioner to refer her to either a pain management clinic or a geriatrician. The general practitioner was also encouraged to agree to a trial of massage therapy and this was paid for by Care Net. Care Net also purchased weekly hydrotherapy.

Examples given by care coordinators of what they regard as '**expensive**' care packages for a client:

H: This client is in her 90s and living in a self-contained flat adjoining her son's house. She has a number of chronic conditions including, Paget's disease, atrial fibrillation, hiatus hernia, mild diabetes and a cataract. She prefers not to use the recommended orthopaedic shoes and walking frames however, she falls frequently. She receives personal care every day, weekly housekeeping and weekly respite care. She has massage fortnightly and podiatry every second month. She also receives frequent transport services for appointments.

I: This client receives a meals service, laundry service, medications delivery service, housekeeping, personal care.

A key feature of the Illawarra Coordinated Care trial was the ability of the care coordinators to spend money from the pool. The care coordinators could identify needs through the assessment process and then purchase a service, aid, or appliance to meet that identified need.

Care coordinators were asked in the August 1999 questionnaire (Question 48) about common service choices they used in care planning. All together massage was mentioned 11 times, hydrotherapy 8 times, and social activities 5 times. Other service choices identified by care coordinators included: housework, shopping, home modifications, occupational therapy, podiatry, transport, Tai Chi, respite care, medical reviews, delivered meals, terry towelling robes, weighing scales and lawn mowing and gardening.

Care coordinators were also asked to describe their most **innovative service substitutions** (Question 49), The answers included:

"Quick chill meals for diabetic that reduced hospitalisation – quick chill low fat meals for weight reduction led to very positive results. These meals were previously unavailable."

"Laundromat services for clients in lieu of Home Care calling to hang out and bring in the washing. The difficulty with the Home Care service was that it was planned for the day – regardless of the weather."

“Pain relief/ fall minimisation for osteoporotic/arthritis clients using Tai Chi. Anecdotally, 90% of those who tried Tai Chi said it made them safer on their feet – the other 10% liked the social aspect.”

“Client with rare chronic foot problem that causes extreme pain and depression. This limited his driving ability and he was unable to visit his family. By installing cruise control in his car his social activities increased and as a result, his depression decreased as he was able to increase his family contact. His health has improved as a result of his improved mental state.”

The larger question of service substitution and how it was interpreted is dealt with in Report Number 2 on the Care Net interventions. To the extent that service choices by care coordinators were made from outside the activities of pool contributors, it represents an important characteristic of the trial that is also discussed in Report Number 10 on the final evaluation.

3.3.5 The role of the care coordinator

The Care Net Illawarra Trial Proposal (Care Net Illawarra, 1997b) indicated that the role of the care coordinator would be “to coordinate the client’s access to services for the target group for the two year trial period.” One care coordinator would be assigned to each client.

The duties, outlined in the Proposal and maintained for the duration of the trial, were to:

- develop a client focussed needs-based plan in consultation with the client/carer and general practitioner;
- translate this into a service delivery plan;
- negotiate with approved service providers;
- cost and purchase the required services;
- advocate for the client, independent of the services;
- monitor service delivery, assessing progress and identifying where needs could be met more effectively;
- monitor service utilisation and cost;
- add, delete and change services as necessary; and
- evaluate outcomes in relation to predetermined care protocols and critical pathways.

It is further stated that care coordinators would have access to documented protocols and guidelines that would:

- set out the rights of consumers in the Trials;
- provide guidelines for how services should be coordinated;
- outline clear procedures for negotiation and referral to service providers; and
- set out the protocol for care coordinators to liaison with other participants in the care coordination team procedures.

Most (14) of the care coordinators responded to the self-administered questionnaire that their role was either clearly or reasonably well defined (Question 17, CC questionnaire).

Eleven care coordinators felt that their job description was a sufficient description of their duties. One care coordinator commented that their job description had changed substantially over the length of the trial as:

“clients became more relaxed ... and doctors became more aware of what we can do.”

Another care coordinator emphasised the importance of flexibility in the job:

“I can only reiterate the absolute necessity of care coordinators having to be able to be flexible in what they are asked to do, but mostly in the way they think (the ability to think laterally at times)”.

Table 3 presents the role description for the care coordinators (Care Net Illawarra, 1997b).

Table 3: Care Net Illawarra care coordinators' role

Role description	Components of role	Care coordinators perceptions of role
<i>Develop a client focussed needs-based plan in consultation with the client/carer and general practitioner;</i>	Client focussed Needs-based Consultation with client/carer Consultation with general practitioner	Yes. Yes. Yes. Sometimes.
<i>Translate this into a service delivery plan;</i>	Service delivery plan	Yes.
<i>Negotiate with approved service providers;</i>	Negotiation Approved service providers	Felt that more could be automated. Felt that greater awareness of Care Net would have assisted.
<i>Cost and purchase the required services;</i>	Cost Purchase	Facilitated through e-mail. Felt more could have been automated.
<i>Advocate for the client, independent of the services;</i>	Advocate Independence	Important role.
<i>Monitor service delivery, assessing progress and identifying where needs could be met more effectively;</i>	Monitor Assess	Important role.
<i>Monitor service utilisation and cost;</i>	Monitor service utilisation Monitor cost	Minimal role.
<i>Add, delete and change services as necessary;</i>	Revamp service plan	Important role.
<i>Evaluate outcomes in relation to predetermined care protocols and critical pathways.</i>		Care protocols developed for CCF. Care coordinators had responsibility to inform clients of care protocols but little responsibility for implementation, monitoring or evaluation. Care coordinators also initiated training sessions for their colleagues.

The original Care Net proposal described a variation from the national hypothesis which sought to test “if improved health outcomes can be achieved with service substitution” (Care Net Illawarra, 1997b). The care coordinators' role did not specifically link them to this aspect of the trial except in the retrospective role of “evaluating outcomes”.

The priority aim of the care coordinators in the trial was the coordination of community services and this approach was not formally coupled with the aim of rehabilitation or stabilisation of chronic illness. Hence although the trial aimed to be client-centred rather than system-centred, the care coordinators themselves were largely involved in the coordination of community care and not

encouraged in the coordination of rehabilitative care involving specific programs targeted at specific conditions or chronic illness.

General practitioners perspectives on the role of care coordinators and the views of other service providers are covered in Reports 6 and 7.

3.4 Conclusion

The following table sets out the key findings that are summarised to form part of the evaluators' conclusions. The table also gives the key cross-references to other reports within the evaluation.

Table 4: Key findings and cross references on care coordination.

Care Coordination Interventions	Key points in relation to hypotheses	Cross References to other Reports
Recruitment	Tight time line and broad focus of recruitment checklist meant a diverse population was recruited. A prevention and investment strategy proposed; trial hypotheses and organisational structures more suited to a targeted approach.	#1 organisation #5 clients #6 GPs
Assessment	Assessment data under-utilised. Measures of function not well integrated to CC and GP tasks. Diagnoses more clearly stated would have helped in targeting interventions. Measures of function best to predict costs. Not used systematically to: help capping, change the focus of interventions; reduce need for other assessments. Some limited progress on common electronic health record;	#2 intervention #4 IT #6 GPs #8 system
Care Planning	High quality intervention for clients in spite of various technical limitations but little systematic blending of medical and social models; impact of interventions on targets was difficult to evaluate. No favourable change in health status, acute or residential care outcomes.	#4 IT #5 clients #6 GPs #7 providers
Service Purchasing	Service substitution not demonstrably systematic. Main effect was private services (from non-pooling, non-risk sharing providers) substituted for public services from pool contributors; implications for pooling business rules, risk sharing and flexibility of providers.	#4 IT #5 clients #7 providers
The Role of the Care Coordinator	Well managed roles and relationships; general practitioners, other private providers and clients globally very happy.	#6 GPs #7 providers #8 system
Service Integration	IT improvements between general practitioners and IAHS; Other changes at the level of system coordination not attributable to Care Net. Not all providers saw care coordinators as primary case manager.	#7 providers #8 system

The original plans for the trial were ambitious and much of what was proposed was not subsequently implemented. If systematic approaches to care coordination were implemented, such approaches were not documented in ways that allowed them to be systematically evaluated. This is not to imply that no such approaches took place or that the model of care coordination was little more than delivering random acts of kindness. The trial tried to do too much and had insufficient resources and skills to do so.

A review of evidence about what works best for whom in the care of older people (Wagner, 1999), found that to improve outcomes in chronic illness, systems must ensure that:

- Exacerbations are identified early in their course and treated appropriately;
- People make behavioural adjustments to control the illness and prevent de-conditioning;
- Effective therapy is prescribed and taken; and that
- People are given support and resources to help them manage the physical, emotional and social impacts of the illness.

There were many missed opportunities in the trial (see Appendix 2) and the care coordination model failed to address the above features in a systematic manner. That said, the Care Coordinators themselves were innovative, dedicated and resourceful. The weaknesses in the trial were not due to the individuals who took on the challenging role of care coordinator. Quite the reverse, the problems were structural, reflecting a fundamental failure of scientific and clinical governance.

Appendix 1 National Hypotheses and Care Net Adaptations

The National Evaluation Reference Group established a primary hypothesis and a series of secondary hypotheses that represented the likely influences on whether that statement could be supported. The Care Net trial adapted that framework into a local set of hypotheses. The national and local hypotheses that are relevant to this report are listed below.

NH1 The primary hypotheses:

Local Illawarra adaptation

<p>National Hypothesis 1:</p> <p>“That coordination of care of people with multiple service needs, where care is accessed through individual care plans, and funds pooled from existing Commonwealth, State and joint programs, will result in improved client health and well being within existing resources”.</p>	<p>Care Net Hypothesis 1:</p> <p>“if improved individual client health and well-being can be achieved within existing resources where an individual’s multiple service needs are met through an individual care coordinator, a single care plan and a single pool of funds”.</p>
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The extent to which this is achieved, will be influenced by:

NH2 The extent of substitution of services within the pool

<p>National Hypothesis 2: “The extent of substitution between services within a trial pool”</p>	<p>Care Net Hypothesis 4: “If improved health outcomes can be achieved with service substitution”</p>
	<p>Care Net Hypothesis 6: “If injury prevention can be achieved with service substitution”</p>
	<p>Care Net Hypothesis 9: “If care coordination and the purchasing of services from a central fund can reduce expected bed days in hospital. This will apply to both lengths of stay and re-admissions”.</p>

NH4 The characteristics of clients selected

<p>National Hypothesis 4: “The characteristics of the clients to whom services are provided”.</p>	<p>No corresponding local adaptation</p>
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NH6 The characteristics of the care coordination function

<p>National Hypothesis 6: “The characteristics of the care coordination function”</p>	<p>Care Net Hypothesis 2: “If the allocation of care coordinators to general practice surgeries improves communication between GPs and other services available to provide necessary services for their patients”.</p>
	<p>Care Net Hypothesis 3: “If the care coordinator in a role of patient/client advocate increase the patient’s involvement in care planning processes”.</p>

NH7 Particular Types of Admin Arrangements

National Hypothesis 7: “The characteristics of trial administrative arrangements”	Care Net Hypothesis 7: “If an information system communication network containing the care plan and relevant clinical information can improve the cost-effectiveness of care coordination processes and outcomes”
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NH8 Consumer Involvement

National Hypothesis 8: “The extent to which health consumers are partners in the planning of the coordinated care trial, the development of care plans and empowered through the coordination process”.	Care Net Hypothesis 5: “If consumer involvement in project management and policy development can improve the process and outcomes associated with care coordination”.
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NH9 Wider System

National Hypothesis 9: “That the primary results can be achieved without detriment to other key areas of government policy, particularly in regard to equity of access and privacy, including any impact on clients outside the trial”.	No corresponding local adaptation
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Appendix 2: Hypotheses and Data Sources

The National Evaluation Reference Group established a primary hypothesis and a series of secondary hypotheses that represented the likely influences on whether that statement could be supported. The Illawarra trial adapted that framework into a local set of hypotheses.

NH1 The primary hypotheses:

Local Illawarra adaptation

<p>National Hypothesis 1:</p> <p>“That coordination of care of people with multiple service needs, where care is accessed through individual care plans, and funds pooled from existing Commonwealth, State and joint programs, will result in improved client health and well being within existing resources”.</p>	<p>Care Net Hypothesis 1:</p> <p>“if improved individual client health and well-being can be achieved within existing resources where an individual’s multiple service needs are met through an individual care coordinator, a single care plan and a single pool of funds”.</p>
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The extent to which this is achieved, will be influenced by:

NH2 The extent of substitution of services within the pool

<p>National Hypothesis 2: “The extent of substitution between services within a trial pool”</p>	<p>Care Net Hypothesis 4: “If improved health outcomes can be achieved with service substitution”</p>
	<p>Care Net Hypothesis 6: “If injury prevention can be achieved with service substitution”</p>
	<p>Care Net Hypothesis 9: “If care coordination and the purchasing of services from a central fund can reduce expected bed days in hospital. This will apply to both lengths of stay and re-admissions”.</p>

NH4 The characteristics of clients selected

<p>National Hypothesis 4: “The characteristics of the clients to whom services are provided”.</p>	<p>No corresponding local adaptation</p>
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NH6 The characteristics of the care coordination function

National Hypothesis 6: "The characteristics of the care coordination function"	Care Net Hypothesis 2: "If the allocation of care coordinators to general practice surgeries improves communication between GPs and other services available to provide necessary services for their patients".
	Care Net Hypothesis 3: "If the care coordinator in a role of patient/client advocate increase the patient's involvement in care planning processes".
	Care Net Hypothesis 9: "If care coordination and the purchasing of services from a central fund can reduce expected bed days in hospital. This will apply to both lengths of stay and re-admissions".

NH7 Particular Types of Admin Arrangements

National Hypothesis 7: "The characteristics of trial administrative arrangements"	Care Net Hypothesis 7: "If an information system communication network containing the care plan and relevant clinical information can improve the cost-effectiveness of care coordination processes and outcomes"
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NH8 Consumer Involvement

National Hypothesis 8: "The extent to which health consumers are partners in the planning of the coordinated care trial, the development of care plans and empowered through the coordination process".	Care Net Hypothesis 5: "If consumer involvement in project management and policy development can improve the process and outcomes associated with care coordination".
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The main sources of data used to examine these hypotheses are described below.

Table 5: Main data sources for Report 3

Sources of Data	Methods
Care Coordinators – Structured Interviews	Sample: 15 care coordinators. Instrument: Set of questions Interview Process: Two CCs at a time.
Notes from feedback session	The use of the interviews included a workshop with CCs about the results (ie validation session) Results of the CC interviews were used as the basis for the subsequent detailed self administered questionnaire.
Care Coordinator – Self Administered Questionnaire Notes from feedback session by evaluators to CCs	Set of 54 questions over 35 pages given to 16 CCs. 15 replies. The use of the questionnaire included a feedback session with all CC's seeking to clarify the interpretation of the results.
Notes from feedback session by CCs to management committee	Additional key points on CC role.
Plus cross references to data from other reports in this series:	
Client interviews	Interviews with 16 clients (active and control) at three points.(#5)
GP focus groups and interviews	Two focus groups with IDGP. Interviews with key informants (#6)
GP survey	Analysis of written responses (#6)
Other provider questionnaire	120 distributed including 20 each to aged aged rehab services and community health. 55 replies. (#7)
Wider system interviews	15 interviews with key informants (#8)

Appendix 3: The existing literature and what it could have contributed to the Care Net Trial.

There are a number of approaches identified in the literature which address ways to achieve good outcomes for older people with chronic conditions living in the community that bear upon the issues of care coordination and the usefulness of different models.

One recent review of published material on approaches to chronic conditions, with particular emphasis on asthma, concluded that:

“Relying on intuition, convenience, and habit ... will not do enough to enable patients and practitioners to control chronic disease. Effective teaching on chronic disease must be based more closely on the findings of behavioural research” (Clark and Gong, 2000)

Targeting

Researchers have been careful to draw a distinction between older people with chronic conditions and older people with functional limitations. American data and its Australian counterparts illustrate the point:

“.. of 26 million institutionalised persons aged 65 years and older who were living in the United States in 1987, 23 million (82%) reported that they had at least one chronic condition, and 16 million (62%) reported two or more such conditions. In terms of functional limitation, however, Medicare classified only 12.8% as limited in the performance of activities of daily living.(Ford, 1999)” (Ford, 1999)

The international literature is quite clear on the need for the appropriate targeting of what is called in America “community-based long-term care (CBLTC)” and in Britain “community care”.

“Cost-effectiveness of CBLTC is directly affected by the wording of eligibility criteria: vague criteria tend to relax admission standards, producing a client population less likely to offset some of its cost by substituting CBLTC for other types of care.” (Capitman, 1986)

The Care Net approach to eligibility identified older people with chronic conditions but it did not necessarily identify those who also had functional limitations, and not necessarily those requiring multiple services.

One researcher offers (Boult and Pacala, 1999a) a cautionary note (Boult and Pacala, 1999a):

“We should acknowledge that the cost-effectiveness of “targeting” (focusing intensive interventions on the high-risk minority of the older population) is still debated. The weight of evidence supports the value of targeting, but no studies have directly compared the outcomes of intensive interventions for targeted populations versus non-targeted populations”.

A review of risk factors for functional status decline in older people living in the community (Stuck et al., 1999) listed the following as major risk factors (alphabetical order): cognitive impairment, depression, disease burden (co-morbidity), increased body mass index, lower extremity functional limitation, low frequency of social contacts, low level of physical activity, no alcohol use compared to moderate use, poor self-perceived health, smoking and vision impairment.

Further screening of trial participants may have identified individuals living in the community at high risk of needing multiple health services (Brody et al., 1997), (Coleman et al., 1997). At least one tool has been developed to identify a general screening instrument consisting of eight questions that surveyors ask by mail or by telephone (Boult and Pacala, 1999a). Prospective testing of this

instrument has confirmed that high-risk seniors use twice as many health-related services as low-risk seniors during the 1 to 4 years after they complete the eight questions.

A review of evidence based care for older people (Wagner, 1999), found that to improve outcomes in chronic illness, health systems must ensure that:

- Exacerbations are identified early in their course and treated appropriately;
- Patients are making behavioural adjustments to control the illness and prevent de-conditioning;
- Effective therapy is prescribed and taken; and
- Patients are given support and resources to help them manage the emotional and social impacts of the illness.

This can only be achieved minimally within the general practitioner's surgery, given the reliance on patient-initiated interactions, the predominance of the shorter consultation, the emphasis on symptoms rather than function or quality of life and the rarity of organised systems of patient education and follow-up.

There was a missed opportunity in the direction of the care coordinator's role in the Care Net trial to further assist in patient support and education in the management of chronic illness and in health promoting behaviours.

Why systematically assess?

Comprehensive and regular assessment of all clients was given a high priority within the trial. This priority partly rests on the literature supporting comprehensive home assessments. Comprehensive home assessments can result in a significant reduction in the number of people requiring assistance with daily living and a significant reduction in the number of people requiring nursing home admissions (Stuck et al., 1995b). Prevention of decline in functional status can at least partially explain reductions in nursing home admissions.

As later authors comment, however, assessment can be seen as a 'black box' and unpacking the box (Silverman and Adams, 1994) may assist in clarifying the uses of assessment. The trial, referred to above (Stuck et al., 1995b), for example, used gerontologic nurse practitioners to perform assessments and that assessment included a medical and medication history and a physical examination as well as an evaluation of functional status and other measures such as safety in the home. Each case was then discussed with a geriatrician, rank-ordered recommendations were developed and there were in-home follow-up visits every three months. The intervention largely consisted of recommendations about self-care, new problems or potentially sub-optimal therapy to be discussed with their general practitioners and the use of community services. Assessment 'per se' may not be the key to the appropriate development of the care plan.

A meta-analysis of controlled trials in 1993 (Stuck et al., 1995a) concluded that, despite an overall impressive impact, not all studies of geriatric assessment showed equivalent effects. It is clear, however, that all studies included a health assessment. In the trial such an assessment was not included specifically as part of the assessment, was not necessarily undertaken by the general practitioner, and either way was not systematically incorporated into the development of the care plan.

The care coordination model

With such a significant change to the participant profile, the evaluators looked for a refinement in the care coordination model adopted in the initial funding submission.

There are four possible sub-groups of older people living in the community for whom some form coordinated care (ie funds pooling; role designation and budget neutrality (Segal, 1999)) may be of benefit:

- Older people with chronic conditions or diseases and concomitant functional limitations;
- Older people with acute conditions;
- Older people at risk of frailty; and
- Well older people.

Identification of such sub-groups may assist in the development of appropriate interventions. However the cost-effectiveness of such 'targeting' is still debated (Boult and Pacala, 1999a). It seems that all these sub-groups were represented in the client population of the trial (see Report Number 5 on clients).

Older people with chronic conditions or diseases, and with functional limitations caused by the condition/s.

This group can be characterised as having health-related problems which would lead to crises with usual care, but might be ameliorated by special proactive care (Boult et al., 1998).(Boult et al., 1998)

Approaches to care coordination for high-risk older people include geriatric assessment and management, case management and interdisciplinary home care and adult day health care. Care or case management is discussed in this report in detail because the care coordination model adopted by Care Net so closely resembles the key components of common approaches to case management.

Case management, as a tool within community services, developed out of concerns that available services did not meet the needs of people with chronic conditions, as well as the belief that these individuals needed assistance in dealing with the fragmentation in funding, eligibility, and service providers of community-based care. The key components of a case-management approach to community-based long-term care appear to be: coverage of an expanded array of community-based services and the use of case management as facilitator and gatekeeper (Applebaum and Austin, 1990). Case management is also a concept and process widely used within the health sector to allocate health-related services appropriately and coordinate them efficiently across health care settings (Satinsky, 1995).

Case management approaches across sectors and across projects can vary along at least 7 dimensions (Bernabei et al., 1998) (Wilkinson, 1996):

- Levels of professionalisation and training of staff: referring to the proportion of staff falling into three levels of education, training and certification: nonprofessional, professional and advanced;

- Levels of specialisation of tasks: referring to how case management tasks are apportioned within a case management agency ie is one case manager responsible for all the tasks of care coordination or are individual staff members responsible for specific case management tasks;
- Staffing mix: Multidisciplinary or interdisciplinary approach;
- Locus of project: is the project co-located within an community service agency or free-standing;
- Cost caps: are there limits to spending;
- Scope of budetary control: how much control can case managers exert over community care and health services; and
- Varying emphasis on health and community services components.

One review of international and Australian case management studies concluded that there is little evidence that case management is cost-effective for people without chronic conditions requiring multiple services (Fine and Thomson, 1995).

A UK researcher writing on the basis of much experience in evaluating community care interventions (Challis, 1994), identified a number of implementation problems in case management, and concluded:

“In view of the kinds of changes in the pattern of community care that are desired and policy-maker’s expectations of the role of case management as one of the processes intended to achieve these changes, clarity about target populations, models of case management, degrees of freedom permitted to practitioners within these models, management of these services and how they fit into the broader system of care is essential.” (Challis, 1994)

In the context of the trial, this is addressed in Report Number 7 on the wider system, which concludes that the implementation of the Care Net model of care coordination had yet to achieve a degree of integration within the local care networks.

This level of inter-organisational planning poses a challenge.

“Such clarity demands that whatever case management model is implemented it requires a coherent logic which clarifies the relationship between structure, location, target group, practice model and likely day to day pressures and incentives and expected outcomes”.

But the rewards are likely to be real if cooperative planning and useful systems are capable of dealing with this apparent duplication of roles and functions.

However,

In the absence of such clarity, investment in case management systems could risk being a more expensive response that fails to produce real gains in welfare or changes in the pattern of provision.” (Challis, 1994)

This statement could well summarise the Care Net experience.

Appropriate triage is important in the practice of case management. Only a relatively small percentage of clients in the project needed on-going, face-to-face care management. One study found that where a multi-level form of case management was practised, case management increased in intensity, and therefore in cost, in proportion to need and capacity to benefit the client (Applebaum and Mayberry, 1996).

There has been a wide variety of community-based long-term care demonstration projects, including demonstrations with care management, over the past 30 years, as a way to delay or prevent inappropriate placement in nursing homes; to contain health care costs; to reduce reliance on acute care services; to assist older people in obtaining community-based services; and to determine the impacts of various levels of community-based care on health services use and costs (Wilkinson, 1996).

One review of the literature on long-term care concluded:

“generally speaking, findings from the research on community-based long-term care have been disappointing at best .. findings have ranged across the demonstrations from no effects to positive and negative treatment effects. Various evaluations of the literature have concluded that these programs not only failed to produce better outcomes for patients, but that they also failed to achieve net cost reductions in use of medical care. In fact, most demonstrations tended to increase costs .. by and large, the programs ended up serving client populations at relatively low risk of institutionalisation and seem to have had relatively small impact on that risk with most studies showing only small differences in the institutionalisation rates between treatment and control groups”. (Wilkinson, 1996)

The costs of community care were quite high in many of the studies, especially the case-managed community care demonstrations, which cost offset much of the potential savings derived from reductions in nursing home use. One study reporting a cost analysis of many of the community-care projects over the last 30 years, found that health care costs for the treatment group averaged about 14% more than the control group across all studies² (Weissert and Hedrick, 1999).

Community care services quickly reach what can be labelled a “break-even point” of diminishing returns in both intensity and duration (usually within the first 6 months of a project and rarely lasting beyond 1 year). It appears that shorter, less expensive interventions do as well as longer, more expensive community-base long-term care service delivery programs (Weissert, 1988).

Even if projects could improve targeting (eg serving only those who would otherwise be placed in nursing homes or have increased medical care costs) evidence suggests that this would be unlikely to reduce costs (Wilkinson, 1996). First, targeting is hard to achieve in practice because of the expense of screening: there may be an inability to identify a sufficient number of at-risk clients to demonstrate cost-effective service delivery. Second, the cost of community care can be quite high, offsetting much of the potential savings on institutional care. Third, community care has limited effectiveness in producing health status change. Data from the projects reviewed by Wilkinson (Wilkinson, 1996) showed that, overall, treatment clients receiving community-based long-term care services fared no better than controls in longevity, physical functioning, mental functioning, or social activities. These findings accord with our findings on Care Net.

Detailed accounting structures of case-management production costs have been developed for some demonstration projects (Capitman et al., 1986). This analysis showed broad variation in the average monthly cost for case-management services. The variations in costs appeared to be determined by variations in staffing structures and by overall project model differences. He postulated two kinds of staffing approach demonstrated by the projects: levels of professionalisation of staff and levels of specialisation.

Overall, more professionalised and more specialised case-management approaches appeared to be more costly, particularly in freestanding case-management agencies, whereas high professionalisation and high specialisation within a consolidated delivery approach was associated with lower costs (Capitman et al., 1986) High professionalism and high specialisation typify the structure of ACAT services in Australia.

Projects that demonstrated reduced utilisation of institutional care and reduced costs were notable in that they employed “cost caps” on service expenditures and integrated the project’s case-management function more successfully into established acute systems of care. These projects

² This finding is remarkably similar to the Care Net result.

appeared to exert greater control over service use, were able to target their program to the appropriate client groups, and were more integrated into the acute care system than other projects (Wilkinson, 1996).

One randomised study of case management and integrated care has demonstrated that an integrated community care program can reduce the risk of hospitalisation and length of stay in either a hospital or nursing home (Bernabei et al., 1998). Despite a similar use of supportive home care resources, subjects in the intervention group showed less physical and cognitive decline and total health care costs per capita were also reduced. The authors comment that the outcomes of their project may have depended on several features, namely, intensive training of case managers; multidisciplinary team (community geriatric evaluation unit comprising geriatrician, social worker and several nurses) and close collaboration between the case manager the community geriatric evaluation unit and the general practitioners. This model is more closely aligned with an Australian ACAT than an Australian coordinated care trial.

Older people with acute medical conditions.

Investment in programs designed to improve efficiency in the care of such common acute conditions as strokes, hip fractures, infections and exacerbations of congestive heart failure may produce substantial benefits. Geriatric units in acute-care hospitals, home hospitalisation programs, and subacute care units have begun to show promise in improving outcomes and lowering costs (Boult et al., 1998).

With this group of high risk individuals the literature supports the use of comprehensive assessment (Rubenstein et al., 1991) either with interdisciplinary or multidisciplinary teams. This assessment process can often reveal a myriad of health-related problems and it is further recommended that interventions are developed on the basis of evidence-based guidelines for effective treatment. For example, research has found that impairments in vision, hearing, lower extremity strength, and affect are precursors of falls, incontinence and functional dependency (Tinetti et al., 1995). Evidence-based guidelines for effective treatment are becoming available.

One reviewer comments that:

“ only a small percentage (perhaps 20%) of older people initially identified as high risk have combinations of treatable conditions so complex that the benefits of sustained team management outweigh the costs. The other 80% have needs that are either straightforward, unresponsive to presently available treatments, or best managed by their own primary physicians – or they do not wish to accept care from a (geriatric management) team (Boult and Pacala, 1999b). “

Frail older people where the approach is distinguished by a frailty-reduction program.

Frailty, or the reduction of important physiologic capacities, is a critical determinant of disability and loss of independence in older adults (Buchner, 1999).

Frailty results from failures in one or more of four types of physiologic capacities: endurance capacity; musculoskeletal capacities; neurological capacities and nutritional capacities. Several randomised trials, he suggests, have demonstrated that multicomponent interventions are effective in reducing declines in function and falls without increasing health care costs, in fact reducing costs in some studies. The interventions all involve the detection of risk factors such as inactivity or polypharmacy and interventions directed at these factors (Buchner, 1999).

Exercise is a critical element in programs designed to prevent frailty (Buchner, 1999). A wellness program might follow the broad recommendation that adults obtain 30 minutes of moderate-intensity

activity most days of the week without specifying the activity. Buchner suggests that a frailty prevention program would focus on preserving physiologic capacities and necessarily include activities that promote endurance, strength, balance and flexibility. This is more than both a medical disease management model and a health promotion model. There is evidence in the literature, albeit it limited, that suggests that integrating selected preventive care recommendations and medical treatment recommendations into an intervention package (a multiple risk factor intervention) can prevent or delay the onset of frailty.

It is interesting to note that international literature suggests a greater possibility for rehabilitation. One researcher notes, for example, that:

“... epidemiologic studies and intervention trials have repeatedly shown that older people, even those with chronic conditions, can improve their health status and function. A significant percentage (usually 15% to 20% of individuals with ADL limitations) will regain their function in a year or more.... Thus, even those seniors with established chronic illness do not face relentless decline” (Wagner, 1999) (Wagner, 1999).

One study found that 18% of chronically ill seniors who received disability prevention and chronic disease self-management support interventions demonstrated better performance of activities of daily living than they did 1 year earlier (Leveille et al., 1998).

Well older people.

There are international studies which demonstrate that an evidence-based health promotion approach can be effective in both preventing functional decline and in the preservation of independence in older people (LaCroix et al., 1996), (Nakanishi et al., 1996) (Leveille et al., 1998) (Wallace et al., 1998) (Leveille et al., 1999, Wallace et al., 1998, Leveille et al., 1998, Nakanishi et al., 1996).

One researcher comments (Buchner, 1999):

“through advances in therapy, considerable progress has been made in reducing the fatal and morbid consequences of diseases like hypertension, arteriosclerotic cardiovascular and cerebrovascular disease, congestive heart failure and atrial fibrillation. As a result of these advances, the outcomes of chronic illness increasingly depend upon the appropriate application of state-of-the-art therapy. ... These proven treatments include educational and supportive interventions as well as drugs and surgical procedures. Behaviour changes are critical elements in the successful management of many chronic conditions. Optimal treatment often necessitates increasing physical activity, strengthening peripheral and pelvic musculature, eliminating cigarette smoking, inspecting feet, taking medication correctly, modifying diet, and other behavioural changes.”

Conclusion

There is evidence that care coordination interventions can lead to cost savings. To produce those savings, however, requires the design of evidence-based interventions. In the words of one respected commentator in the field: “you can integrate all of the services for some of the people, some of the services for all of the people, but you can't integrate all of the services for all of the people” (Leutz, 1999).

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