The development and implementation of the Chronic Care Management Programme in Counties Manukau

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Abstract

Aims To develop an effective and efficient process for the seamless delivery of care for targeted patients with specific chronic diseases. To reduce inexplicable variation and maximise use of available resources by implementing evidence-based care processes. To develop a programme that is acceptable and applicable to the Counties Manukau region.

Methods A model for the management of people with chronic diseases was developed. Model components and potential interventions were piloted. For each disease project, a return on investment was calculated and external evaluation was undertaken. The initial model was subsequently modified and individual disease projects aligned to it.

Results The final Chronic Care Management model, agreed in September 2001, described a single common process. Key components were the targeting of high risk patients, organisation of cost effective interventions into a system of care, and an integrated care server acting as a data warehouse with a rules engine, providing flags and reminders. Return on investment analysis suggested potential savings for each disease component from $277 to $980 per person per annum.

Conclusions For selected chronic diseases, introduction of an integrated chronic care management programme, based on internationally accepted best practice processes and interventions can make significant savings, reducing morbidity and improving the efficiency of health delivery in the Counties Manukau region.

Since the early 1990s there has been a steady and significant growth in the number of acute adult medical admissions to the Counties Manukau District Health Board (CMDHB) provider arm, South Auckland Health (Figure 1). The cumulative growth since 1997 has been 38%.

In 1999, the Ministry of Health identified that much of the growth in acute hospitalisations was in preventable admissions and that a majority of these were “sensitive to prophylactic or therapeutic interventions deliverable in a primary health care setting”. It was suggested that up to 30% of hospital admissions could be prevented with more timely primary care intervention. Prevention of 30% of acute medical admissions during the fiscal year 2000/01 would have meant approximately 4000 fewer admissions to South Auckland Health.

Of the 10 conditions responsible for the most bed day utilisation, the most significant were respiratory infections, cardiovascular disease, chronic obstructive pulmonary disease (COPD), and heart failure. Eighty per cent of bed days were utilised by people suffering from these four conditions. Furthermore, diabetes was an often unrecorded,
but significant, underlying comorbidity. This situation is likely to worsen with the predicted doubling of diabetes prevalence by the year 2020.²

Figure 1. Growth in acute admissions at Middlemore Hospital

CMDHB commissioned a report from Milliman & Robertson, Inc. to outline options to South Auckland Health for managing growth in admissions. The report recommended a change from the current loosely-managed delivery system to a well-managed delivery system.³ This would create a significant saving in hospital costs, but some increase in primary care expenditure. It would also require a number of changes to the current delivery structure, including integration of care, alignment of provider and user incentives, and enhanced infrastructure.

An integrated chronic disease management approach was considered as one of these potential changes. A scoping study for the necessary accompanying information systems recommended Counties Manukau clarify its definition of disease management, the scope of care to be included within the programme, and establish a disease management design guide to which teams could refer in creating an integrated disease management pathway.⁴ The framework described in Figure 2 was suggested as a guide to developing and implementing the process.

The need for such an approach was reinforced by the New Zealand Health Strategy 2000,³ which identified 13 population health objectives including diabetes, cardiovascular disease, smoking, nutrition and exercise. The New Zealand Primary Care Strategy 2001 also recommended a shift in delivery to primary care and moving away from acute care to a new vision encompassing chronic care.⁶

Hence, chronic disease management for diabetes, COPD, congestive heart failure (CHF), and ischaemic heart disease (IHD), has become a priority in Counties
Manukau. Furthermore, the population in the area consists of 17.5% Maori and 17% Pacific Islanders, and 34% of the population lives in areas that are classified as ‘very deprived’ (deciles 9 and 10). The significance of this is that for virtually every health condition, Maori and Pacific people have higher rates of disease, and the most deprived do worse than the least deprived.7

Figure 2. Framework for developing chronic care management process

The project aim was to implement a generic system of chronic care management for targeted patients, across community and hospital settings. Desirable features were that the system should reduce inexplicable variation, maximise health gains in an efficient manner, and support patients in a clear coordinated care process of partnership with the patient, their whanau/family and the wider community. It should be adaptable for all chronic diseases and appropriate for a wide range of providers.

Methods

The overall approach was to follow the Plan Do Study Act (PDSA) continuous quality improvement (CQI) cycle. It is a simple but sophisticated and demanding way to achieve learning and change in a complex system.8

Plan: establishment of a model for disease management projects

A disease management working group developed the first working model. Members were drawn from primary care organisations (PCOs) and South Auckland Health. The group reviewed the need for chronic care management, defined it, and described ideal outcomes. Factors involved in planning and development, including principles and values, were elucidated. Important concepts were outlined, including details on how projects could be patient focused rather than disease focused, cover the full spectrum of the disease process, be based on international best practice guidelines, ensure provider acceptance, and incorporate appropriate information systems. The result was the Chronic Care Management Policy and Planning Guide for Counties Manukau.9

Do: individual disease pilots carried out

Pilot projects were joint ventures between PCOs and South Auckland Health. Governance groups usually included general practitioners, primary care organisation managers, practice nurses, a hospital-based specialist, a hospital or later a CMDHB manager, Maori and Pacific representatives. These groups had financial control over most aspects of their projects. Incentives to participate were limited to the drive to deliver the best quality service possible. Whilst money was made available to ensure patients had free access to services, it covered no more than service delivery. Further details of the individual projects can be found in the CMDHB web site.10
COPD The study was a twelve-month randomized controlled trial based in primary care. General practices were randomised to an intervention group or a control group (ie, care as usual). The intervention group followed a care plan based on a clinical guideline with collaboration between patients, GPs, practice nurses, hospital-based physicians and nurse specialists. Pre- and post-trial assessment procedures included a dyspnoea rating, spirometry, Shuttle Walk Test, SF-36, and the Chronic Respiratory Disease Questionnaire (CRDQ).

CHF The aim was to test implementation of process interventions and systems. Key features were a primary care focus, incorporation of patient enrolment, a diagnostic review, a review of management, two education sessions to improve consistency with guidelines, and the use of patient-held care plans and early post-discharge primary care interventions.

Diabetes The first pilot project reviewed the role of a diabetes care coordinator (DCC), the use of care pathways and referral protocols, as well as information sharing between providers. The second tested the implementation of best practice guidelines. Provider change mechanisms, as identified by the extensive literature search of the University of Pennsylvania Health Systems in their disease management programmes, were used. The aim was to establish an integrated diabetes disease management programme using best practice guidelines, patient-held care plans, free three-monthly reviews, and comprehensive data collection, all supported by a DCC. The project was also a test site for the use of an 'Integrated Care Server' to provide a data warehouse facility with the ability to provide clinicians with feedback on clinical management, and with the potential to facilitate information sharing between clinical care providers.

COPD/asthma This project provided a mechanism for increasing patient information, involvement, and motivation to participate in the ongoing management of their chronic disease. The SF-12 and a questionnaire on aspects of their illness identified gaps in management and provided patient-centred baseline data. Patients were provided with information to assist in self-management, with the emphasis upon patient perceptions of their illness and function.

Study: external evaluation This was carried out through a contract with the University of Auckland Faculty of Medical and Health Sciences between November 2000 and October 2001. Quantitative and qualitative evaluation was performed. A return on investment (ROI) was calculated for each disease state to enable ongoing funding to be allocated to the projects. This used the results of local pilots as indicators of the ability for Counties Manukau to replicate work described elsewhere. The evaluation also specifically assessed the cultural competence of each project through a series of interviews and focus groups, conducted by trained interviewers in patients' own languages.

Act: development of a new generic model for a single disease management process encompassing comorbidity The early lessons from these pilots were incorporated into a review of the initial model. Leaders from each of the pilot projects, Maori and Pacific clinicians, and a funder, formed a writing group to undertake this process. Secondary clinicians were closely involved in drafts, and the main drafts were circulated widely. Members of the group were chosen by the project sponsor and received financial compensation for lost income where necessary. A separate series of two cultural competence workshops was held to inform the development of the cultural competence section. The latter was based on the National Centre for Cultural Competence model. The Counties Manukau Chronic Care Plan (September 2001) was used as a template against which the earlier projects could measure their structures and processes. These projects were then modified so that common processes and tools could be used, despite comorbidities.

Results

Key learning points that emerged from our experience were:

- Participants in planning and development as well as in the projects themselves need committed time.
- This may mean payment for locums in order to access clinician time, including nurses.
- Clinicians need protected time with the patient and their family support group in order to deal effectively with the complexity of chronic care management (CCM).
• Both primary and secondary ‘silos’ need to be part of a joint approach to the problem.

• Clinical and management champions are necessary in both primary and secondary care.

• Implementation is key – some pilots did not achieve their objectives for a variety of reasons, and whilst the concepts are simple, their application involves changes to the model of healthcare delivery. Achieving success in the conversion from pilot to rollout requires excellence in planning, change management, and implementation.

• Governance groups had financial control over most aspects of their projects.

The results of individual projects are summarised below. More details are available on the CMDHB web site.

**COPD** Results based on data from 130 patients show total reduction in bed days in the intervention group (n = 78), from 493 pre-trial to 205 during the trial, whereas the control group (n = 52), from 331 pre-trial to 298 during the trial. There was a significantly greater reduction in respiratory bed days (mean 2.6 days, 95%CI (0.5, 4.7)) for the intervention group compared with the control group. A pulmonary rehabilitation programme was attended by 60% of those in the intervention group and 10% of those in the control group.

**CHF** The project achieved significant improvements in a number of areas. The number of echocardiograms received by patients increased, and prescribing became more consistent with guidelines. A significant reduction in secondary care utilisation occurred. Provider and patient satisfaction and other results are presented elsewhere in this issue.

**Diabetes** The first pilot, trialing a new DCC service, demonstrated a significant difference between intervention and control for those patients who started with HbA1c levels above 8%. However, the way in which the DCC role was set up led to a significant level of mistrust between the roles of the GP and the DCC. The second pilot, testing guideline implementation, appeared to show a reduction in HbA1c levels, and clear change in provider behaviour, though no formal analysis was published.

Some early data from the 2001 diabetes disease management pilot project were available from the Integrated Care Server, for the external evaluators. They contained enrolment and follow-up data for the two practice sites involved. They show a significant reduction in the percentage of people with elevated HbA1c, and a fall in the mean HbA1c.

**COPD/asthma** Enrolment rates and follow-up rates were low. This low response rate raised serious issues of non-response bias, and suggested a lack of engagement with the project by the clients. The project met with only limited success and did not go on to an ROI analysis.
Table 1. Return on investment (ROI) estimates

<table>
<thead>
<tr>
<th>DIABETES</th>
<th>Estimated volumes</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HbA1c &gt; 9</td>
<td>High risk</td>
<td>8000</td>
</tr>
<tr>
<td>Lipids &gt; 6.0</td>
<td>Moderate risk</td>
<td>12 000</td>
</tr>
<tr>
<td>BP &gt; 135/85</td>
<td>Total moderate + high risk</td>
<td>20 000</td>
</tr>
<tr>
<td>Smoking Yes</td>
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</tbody>
</table>

**Annual costs per person**
- **High risk**: $280
- **Additional drugs less GMS**: $22
- **Moderate risk**:
  - Tracking: $25
  - One off care plan: $20

<table>
<thead>
<tr>
<th>Annual benefits</th>
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<tbody>
<tr>
<td>Up to 28% of annual admissions</td>
</tr>
<tr>
<td>Represents 1.5 days per enrolled patient or $320</td>
</tr>
<tr>
<td>Plus renal savings</td>
</tr>
<tr>
<td>Plus other hospital costs (outpatients, fixed)</td>
</tr>
<tr>
<td>Surgical savings not included in ROI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IHD/ANGINA</th>
<th>Estimated volumes</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unstable Angina</td>
<td>High risk</td>
<td>4800</td>
</tr>
<tr>
<td>Or Heart Attack</td>
<td>Moderate risk</td>
<td>35 200</td>
</tr>
<tr>
<td>Total moderate + high risk</td>
<td>40 000</td>
<td></td>
</tr>
</tbody>
</table>

**Annual costs per person**
- **High risk**: $280
- **Additional drugs less GMS**: $29
- **Moderate risk**:
  - Tracking: $0
  - One off care plan: $0

**Annual benefits**
- Up to 28% of annual admissions
- Represents 1.3 days per enrolled patient or $277
- Plus other hospital costs (outpatients, fixed)

<table>
<thead>
<tr>
<th>COPD</th>
<th>Estimated volumes</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has COPD</td>
<td>High risk</td>
<td>1500</td>
</tr>
<tr>
<td>Moderate risk</td>
<td>1500</td>
<td></td>
</tr>
<tr>
<td>Total moderate + high risk</td>
<td>3000</td>
<td></td>
</tr>
</tbody>
</table>

**Annual costs per person**
- **High risk**: $280
- **Additional drugs less GMS**: ($120)
- **Moderate risk**:
  - Tracking: $50
  - One off care plan: $20

**Annual benefits**
- Up to 27% of annual admissions
- Represents 4.6 days/$980 per enrolled patient
- Plus other hospital costs (outpatients, fixed)

<table>
<thead>
<tr>
<th>CHF</th>
<th>Estimated volumes</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis on Echo</td>
<td>High risk</td>
<td>4500</td>
</tr>
<tr>
<td>Moderate risk</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Total moderate + high risk</td>
<td>4500</td>
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</tr>
</tbody>
</table>

**Annual costs per person**
- **High risk**: $207
- **Additional drugs less GMS**: $19

**Annual benefits**
- Up to 28% of annual admissions
- Represents 2.1 days/$447 per enrolled patient
- Plus other hospital costs (outpatients, fixed)

**Return on investment** The calculations for the ROI and the key assumptions of the calculations are shown in Tables 1 and 2 respectively. Further information is available on the CMDHB web site. The calculations are based on published data on disease management for diabetes, IHD, COPD and CHF. IHD was
included as it was recognised that secondary prevention would probably have a positive ROI.

Table 2. Assumptions of return on investment (ROI) calculations

<table>
<thead>
<tr>
<th>Savings</th>
<th></th>
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<tbody>
<tr>
<td>• Reduction in admissions to 35% of current admissions for targeted diseases by year 6 pro rated based on % of high risk patients enrolled.</td>
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</tr>
<tr>
<td>• Average bed days per admission</td>
<td></td>
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<tr>
<td>• Diabetes = 5.7</td>
<td></td>
</tr>
<tr>
<td>• Angina / IHD = 6.0</td>
<td></td>
</tr>
<tr>
<td>• CHF = 8.8</td>
<td></td>
</tr>
<tr>
<td>• COPD = 6.9</td>
<td></td>
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<tr>
<td>• Bed day marginal cost at $213 (casemix)</td>
<td></td>
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<tr>
<td>• Stepped Fixed costs based on 15 bed per ½ ward – triggered when 15 bed day equivalents achieved at $522 000 pa per ½ ward</td>
<td></td>
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<tr>
<td>• GMS savings on acute GP visits offset against increased drug costs</td>
<td></td>
</tr>
<tr>
<td>• Renal Dialysis savings based on delaying 50% of the Diabetes High Risk patients from entering dialysis by 2 years at $55 000 per annum</td>
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</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• High risk patients at $280 per annum includes 4 GP visits and 6 hours nursing</td>
<td></td>
</tr>
<tr>
<td>• Moderate risks patients – one off care plan at $20</td>
<td></td>
</tr>
<tr>
<td>• Moderate risk patients – ongoing monitoring costs of between $25–50 pa</td>
<td></td>
</tr>
<tr>
<td>• GP training costs $200 set up cost and $1,200 per annum till year 3 and $800 per annum thereafter</td>
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<tr>
<td>• Project Manager at $100k per annum</td>
<td></td>
</tr>
<tr>
<td>• Nursing costs $100k year 1, $200k years 2 and 3</td>
<td></td>
</tr>
<tr>
<td>• IT costs $1m year 1, $0.5m year 2 and thereafter $200k per annum</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diabetes = 5% per annum till year 7 then 3% per annum</td>
<td></td>
</tr>
<tr>
<td>• Angina / IHD = 3% per annum till year 5 then 0% per annum</td>
<td></td>
</tr>
<tr>
<td>• COPD = 5% per annum till year 5 then 0% per annum</td>
<td></td>
</tr>
<tr>
<td>• CHF = 5% per annum till year 5 then 0% per annum</td>
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</tbody>
</table>

The final chronic care management (CCM) model

The final single model is illustrated in Figure 3. Achieving health outcomes is seen as an output of negotiated decisions between the patients, in the context of their normal environment, and the health advisory team. For patients with chronic disease to have better health outcomes they need to feel understood, respected and empowered by the general practice team to share in clinical decisions.26,27 As illustrated, there are eight core components informing this negotiation.

1) Culturally competent systems and provider skills These were defined as a set of academic, experiential and interpersonal skills that allow individuals to increase their understanding and appreciation of cultural differences and similarities within and among groups. The role of values, traditions, and customs are explored, and goals and operational approaches are described.

2) Information systems The plan reviews, in detail, the expectations of a CCM programme of its IT team, and the needs of the IT team that must be fulfilled by CCM programme members. Key areas are the embedding of guideline rules in decision
support software, the provision of flag alerts, and reminders of routine events. The information sharing needs are analysed in detail and reporting systems for administration and clinical performance review are discussed. Since all processes are linked through IT, this topic sits close to the consultation, along with cultural competencies.

3) **Selection of target groups** The identification of patient target groups is integral to consideration of value. The roles of needs analysis, benefit analysis, and health economics analysis are described.

4) **Clinical guidelines and education of patients and providers** Locally endorsed evidence-based guidelines are the foundation of CCM processes. The plan recommends guidelines should be multidisciplinary and agreed to by all providers, and be used in a way that is sensitive to the beliefs, values, culture and socioeconomic status of the patient and their family. New national guidelines should be used to audit processes and determine areas in which education for general practitioners and practice nurses is most valuable.

5) **Support from and linkage to secondary care – services and advice** The plan recommends secondary care clinicians are involved at all levels of the infrastructure. They should ensure that clinical care provided in secondary care is consistent with the regional chronic disease management guidelines, and patients with chronic care conditions attending hospital should be linked into primary care enrolment. Innovative options for bringing secondary skills into the primary care setting are described.

6) **Skills in behavioural change, patient care planning** Behavioural change involves patient education and empowerment. Education covers physical aspects, effects on the patient’s whanau/family, the meaning of the illness in their lives, emotional and spiritual aspects, and the development of self-responsibility. A patient-held care plan is negotiated, documented and given to the patient.

7) **Practice systems that encourage proactive care** Record systems for proactive care are described. These should identify and flag target patients. A flow plan of patient processes is developed in each practice. Easy access to clinical decision support material, and critical investigations, is needed.

To function well, practice teams will need a CCM Project Manager for each initiative, practice nursing staff as part of the team, regular team meetings, and an in-house review of performance and continuing improvement, based on key performance indicator (KPI) reports.

Financial systems are important to enable ‘free to the patient’ general practice visits; limits on patient exposure to pharmacy bills; time for education and quality improvement by GPs, practice nurses and community health workers; and practice management time to implement and manage CCM projects.

Many practices require extra funding and support to develop skills and find time for developing and managing these systems. Practices also need direction, and support for the training of their staff members in these processes.

8) **Evaluation, audit, feedback** Evaluation of GP team performance, patient benefits and net costs, and the processes of the generic CCM programme are needed for relevant CQI processes.
Systems to gather clinical and utilisation data are needed. Costs of services and resources should be tracked. These are detailed in the Counties Manukau Chronic Care Plan, September 2001.

The tools that were common to the four projects and thus comorbidities are summarised in Table 3.
Table 3. Tools common to individual disease projects

<table>
<thead>
<tr>
<th>Tools common to the individual disease management pilots</th>
<th>Tools common to implementation of individual disease programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based guidelines in place</td>
<td>Independent practitioner association (IPA) training guide</td>
</tr>
<tr>
<td>Intervention description</td>
<td>GP guides</td>
</tr>
<tr>
<td>Target group criteria</td>
<td>Practice nurse guide</td>
</tr>
<tr>
<td>Patient enrolment form (included in care plan)</td>
<td>Cultural competence requirements and the creation of a trusting environment</td>
</tr>
<tr>
<td>Patient action plan</td>
<td>Practice system requirements</td>
</tr>
<tr>
<td>Generic patient held care plan, with all care givers and family support members having input</td>
<td>Arrangements for practice nurses to have paid time to manage these activities</td>
</tr>
<tr>
<td>Patient education for care plan</td>
<td>Governance group with financial influence and accountability</td>
</tr>
<tr>
<td>Practice nurse education checklist and/or patient questionnaire</td>
<td></td>
</tr>
<tr>
<td>Educational guide for GP and practice nurse meetings</td>
<td></td>
</tr>
<tr>
<td>Practice Management Software Systems data set and specifications</td>
<td></td>
</tr>
<tr>
<td>Practice Management Software Systems template</td>
<td></td>
</tr>
<tr>
<td>Reporting functions</td>
<td></td>
</tr>
<tr>
<td>Key performance indicator (KPIs)</td>
<td></td>
</tr>
<tr>
<td>Primary/secondary care interface structures</td>
<td></td>
</tr>
<tr>
<td>Information systems allowing primary and secondary care providers to access selected data in real time</td>
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</tbody>
</table>

The critical objectives for this group of diseases, which these tools were aiming to influence, were to achieve best-practice management of a limited number of key factors:

- Glycaemic control
- Blood pressure control
- Lipid control
- Smoking cessation
- Diagnostic accuracy for CHF by echos
- Appropriate medication, and use of:
  - beta blockers
  - ACE inhibitors
  - spironolactone

**Discussion**

As far as we are aware, there were few other sites to guide our development of a single process for a chronic care comorbidity system and the associated set of tools,
which are ‘populated’ from single disease guideline rules. Extrapolation from single
disease situations is an experiment. Also, what works with the self-motivated early
adopters might not do so with late adopters. Ongoing careful monitoring of outcomes
and use of CQI processes will be important to this programme.

The level of evidence from our own individual projects also varies. The COPD project
was a randomized control trial, whilst the CHF trial was a longitudinal cohort review
of before and after comparisons with no control. The latest diabetes project is based
on implementing previously proven concepts, and not set up as a trial. ROI
calculations were initially based on a large number of assumptions and limited local
evidence. However, the new ROI in diabetes is better than our initial calculations.

The majority of the initial projects were managed by independent practitioner
associations (IPAs) or PCOs on contract to CMDHB and capitalised on their track
record for successful change management. However, there was a reluctance of
primary care organisations, in particular, to meaningfully engage in the
implementation of the ensuing generic plan until they were part of a functioning
governance group. This reflects the importance of all parties being a part of the
development process and key policy decisions. An underlying need for the
governance group to be functional is that it has delegated financial responsibility, and
in exchange carries outcome accountability.

In retrospect, it was not surprising to find that the way in which the DCC role was set
up in our first pilot led to ‘turf issues’. The Australian Care Coordinator trials were at
the same time experiencing similar issues. Of their three models, they found that the
best one was that in which aspects of care were variously shared between a general
practitioner and a service coordinator. The alternative models of either the GP being
solely responsible, or a new service coordinator being responsible with GP input
representing a contribution to the process of care, were less successful. The
implication is that the structure must be a team built from the two providers.

The positive ROI on IHD means this should be included as a further CCM module.
The CCM Programme is linking with a local project in IHD in order to develop
process compatibility and we plan to build a compatible IHD component into our
programme from our joint experiences.

Our initial model was based on common chronic conditions. Costs were estimated at
$280 per patient per annum for direct patient services, plus payment for practice
management and systems support, and payment for IPA support and education. This
allowed for four general practitioners’ visits and eight nursing visits. Whilst this
budget proved sufficient for diabetes, IHD and CHF, our experience in the COPD trial
suggests more practice time will need to be included in the budget.

The model we arrived at was separate from, but similar to, that developed by the
Robert Wood Johnson Foundation’s National Program for Improving Chronic Illness
Care. Our components have been grouped approximately into their four groups of
patient self-management support; provider decision support; delivery systems design;
and clinical information systems. Both models are designed to inform the productive
interaction of informed and activated patients with a prepared and proactive team. We
have introduced the further concept of cultural competence. Cultural competence is
core to the population of Counties Manukau. However, it may be an overlooked
barrier to success in other multicultural societies.
The information technology system of a data warehouse and guideline-based rules engine will continue to build capacity around the needs of the other diseases as they come into the programme, and will eventually be able to handle guideline rules for any regionally accepted guidelines.

The CQI approach of the University of Pennsylvania Health System, and the collaborative approach between IHI Boston and Improving Chronic Illness Care with their breakthrough series, are important models for us to follow in further engaging clinicians and improving outcomes through improved processes.29

The final CCM model is shown in Figure 3. In essence, achieving health outcomes is seen as an output of negotiated decisions between the patients, in the context of their normal environment, and the health advisory team. For patients with chronic disease to have better health outcomes they need to feel understood, respected and empowered by the general practice team to share in clinical decisions.26,27

The final CCM model is shown in Figure 3. In essence, achieving health outcomes is seen as an output of negotiated decisions between the patients, in the context of their normal environment, and the health advisory team. For patients with chronic disease to have better health outcomes they need to feel understood, respected and empowered by the general practice team to share in clinical decisions.26,27

We will be reviewing other diseases for inclusion in the programme. Asthma, depression and gout will be the subjects of later scoping exercises and will include ROI analysis.

It appears that for selected chronic diseases, the introduction of an integrated chronic care management programme, based on internationally accepted best practice processes and interventions, is making significant differences to reducing morbidity and improving the efficiency of healthcare delivery in the Counties Manukau region. The vision of a single, seamless and effective care process for the patient looks realistic.

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