Journey of a general practice team in developing a planned, proactive approach in the management of chronic kidney disease

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Abstract

This project focused on ensuring general practice teams within the region had a systematic, planned, proactive approach to managing patients either with chronic kidney disease (CKD) or those that had the potential to develop the condition. The Kidney Health Project, whose implementation into one general practice is described in the following article, demonstrates significant outcomes such as improved identification and staging of clients with CKD, enhanced medication review processes and increased client satisfaction with care provision. This project also highlighted the benefits of using robust quality improvement methodologies.

Keywords

Chronic kidney disease, general practice, systems improvements.

Background

MidCentral District Health Board (MDHB) funds and provides a range of health and disability services to around 160,000 people in the mid to lower North Island of New Zealand (NZ). It has a large rural catchment, with Palmerston North being the major city. This pilot project focused on improving how general practice teams (GPTs) identified and managed clients with, or at risk of having, chronic kidney disease (CKD). CKD refers to the diagnosis of chronic renal impairment. Diagnosis of this disease is through serum creatinine; however, abnormal rises are often not seen until at least 50% of renal function is lost (bpacnz, 2009). This means without early detection the risk of further injury and progressive loss of renal function is high. Unless appropriate treatment such as renal replacement therapy (RRT) is offered, end-stage kidney disease (ESKD) is inevitable. In NZ, the average three-year cost per patient for stage 5 treatment is in the range of $105,000 and $193,000, noting this compares renal transplant to in-centre haemodialysis, respectively (Central Region’s Technical Advisory Services Limited, 2007). In 2006, the Ministry of Health (MoH) stated that there was no reliable prevalence estimates of the number of people in NZ with CKD. Data from the United States indicates CKD affects 11% of the national population.

Maori and Pacific peoples living in NZ are 15% and 7% of the population respectively (MDHB, 2014), and are particularly affected by long-term conditions including diabetes, cardiovascular disease and CKD. As noted at an Expert Working Group Meeting (2010), Maori and Pacific peoples are less likely to seek help when ill, less likely to fill a prescription or receive prescribed tests. Cost is a significant factor. The same document reports evidence showing that they do not receive comparable health management across a range of chronic conditions. A 2006 adult literacy and life skills survey highlighted that Maori had poorer health literacy skills than non-Maori.

The MoH (2006) noted that screening in the primary health care (PHC) setting can be an effective means of identifying the presence of disease in an individual; however, there is currently

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no systematic process for this in NZ in regard to CKD. Being able to detect kidney problems early allows:

- Early protective intervention to reduce progression towards ESKD.
- Monitoring of cardiovascular risk factors to reduce cardiovascular disease.
- Monitoring and treatment of disease (bpacnz, 2009).

The Kidney Health Pilot was focused on the small townships of Levin and Foxton, which are located within the Horowhenua area of the MidCentral district, and which had at that time a total of 10 GPTs. A number of issues emerged during this initial project. These included differences in client coding and the inconsistency of ‘flagging’ at-risk clients. Each clinician, even within the same practice, could code clients differently in the patient management support (PMS) system used. This made it difficult to know practice-wide how many clients had CKD or its precursor. As a result, a decision was made to consistently use one code across the district (KO6). Additionally, it was found that patients were often not staged appropriately using evidence-based practice. Patient recall systems for CKD clients were only sporadically used.

Following on from this scoping exercise a consistent, practice-wide quality improvement project was launched. It was driven by a lead clinician who was a clinical nurse specialist — diabetes with 15 years’ specialty experience, more recently in the primary care environment. Over the course of the next several years this clinician worked to support GPTs in the Horowhenua and eventually expanding into the wider MidCentral district. The focus was moving GPTs from having an ad hoc process for managing CKD clients to a planned, systematic method. This involved helping practices create a disease register, so that clinicians could easily see which patients had the condition, and assisting them to complete a renal assessment tool. The latter showed GPTs how well they managed their CKD patients according to best practice guidelines. This included management of diabetes, lipids and blood pressure. It also covered medicine management and whether smoking status was recorded. Additionally, a patient notes review was administered alongside the renal assessment tool, which gauged the strengths and weaknesses of the practice. An action plan would then be written alongside the practice’s clinicians to help direct them as to how to correct deficiencies.

Alerts and flags needed to be in place for ‘at-risk’ populations such as Maori, Pacific Islanders, or those with diabetes, but were not typically present on the PMS. It was ensured by project’s end that routine alerts and flagging were in place and responded to by the GPTs.

A previously developed renal algorithm, designed by a local renal physician to support care in general practice, was not in use as community-based clinicians found it cumbersome. This was ultimately reconfigured and supported by a newly created renal referral form.

During the project, it was realised that the experience of having kidney disease by those living in Horowhenua was not understood by clinicians, so a focus group was used to explore issues from a patient’s perspective. The information gained was used to develop a business case to secure funding for patients to receive counselling with a private provider, helping them come to terms with living with a long-term condition. Positive consumer feedback has been received about this initiative.

Lastly, education was provided to GPs and practice nurses, which particularly focused on the staging of CKD clients. Participants provided positive feedback and at the conclusion of the project practitioners were able to appropriately stage clients and accurately determine numbers of CKD patients. It is important to note that some practices realised they had substantially more CKD patients than previously thought. To illustrate the impact of the project, the rest of this article is devoted to outlining implementation in one GPT in the district.

Case study

The GPT is an established urban general practice which offers comprehensive primary care services to a population of approximately 2,247 people. The practice is a member of the Central Primary Health Organisation (CPHO) and is CORNERSTONE-accredited (a quality improvement program specifically designed by the Royal New Zealand College of General Practitioners). It has demonstrated a strong commitment to service improvement in the past three years, completing a range of initiatives involving system redesign. The team undertook to complete the Kidney Health Project between June 2011 and July 2012.

Systems improvements realised in the practice

Data: MedLab Central (the laboratory provider for MDHB) provided data highlighting abnormal creatinine and estimated glomerular filtration rates (eGFR) results from the last five years. The data was used to identify which clients had CKD and to develop a CKD register. It was anticipated that over time an ‘at-risk’ register would also be developed. Staging of CKD was based on the CKD Management in General Practice Summary Guide (Kidney Health New Zealand, 2008).
The project’s assessment tool was used at the start of the implementation process to provide a baseline understanding of how well the team were managing patients with CKD. The tool was repeated at the conclusion of the project to assess changes in patient management.

**Referral to specialist renal services (SRS):** The referral form was reviewed during the project period and plans are currently under way to implement electronic referrals within the MDHB.

**Use of resources:** Team members now utilise the resources developed during the original project. This includes the guideline and action plan for care and management of patients with CKD in primary care, and the guide for screening ‘at-risk’ populations and for the staging of patients with CKD.

**Education:** The MDHB has had a district-wide focus on encouraging better management of CKD clients within PHC and to this effect a renal symposium is now being held annually. Topics have included medicines management, laboratory testing, palliative care, nutrition, psycho-social aspects and case review opportunities. Other additional education provided to the team included review of the chronic care model and its application to the project, self-management and self-management support and living with a long-term condition (the ‘Patient experience of the renal journey’).

Once those with CKD were systematically identified, a decision was made to then link these patients in with a case management program, which was already under way via the auspices of the broader, umbrella structure of the CPHO. This involved classifying clients according to levels of complexity and eligibility criteria for the Enhanced Care Plus (EC+) program. This program offers more intensive nurse support and follow-up to those with multiple long-term conditions and provides a number of free, extended consultations. The systems and processes developed during this implementation phase are now transferable to other subgroups with long-term conditions (arthritis, heart disease and so on).

One change that occurred during the project’s implementation at the practice was the decision made by the MDHB to purchase Map of Medicine (MoM) software from the United Kingdom. The software provides access to evidence-based guidance and clinical decision support during patient consultations. The CKD project information linked seamlessly into this system.

**Results**

At completion of the project, the following measures were noted from a clinical notes audit of a number of patients:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Outcome</th>
</tr>
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<tbody>
<tr>
<td>Smoking status recorded</td>
<td>100%</td>
</tr>
<tr>
<td>Patients now staged with CKD</td>
<td>91%</td>
</tr>
<tr>
<td>CKD patients having had a diabetes annual review</td>
<td>67%</td>
</tr>
<tr>
<td>Evidence of a medication review occurring</td>
<td>90%</td>
</tr>
<tr>
<td>Referral to other providers completed</td>
<td>67%</td>
</tr>
<tr>
<td>Care plan developed with specialist renal services</td>
<td>75%</td>
</tr>
</tbody>
</table>

The numbers of patients known to have CKD had changed markedly.

Table 2 shows CKD rates pre- and post-project implementation.

<table>
<thead>
<tr>
<th>CKD stage number of patients pre-project</th>
<th>Numbers of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not staged</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CKD stage number of patients post-project</th>
<th>Numbers of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>65</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

In total there were 82 patients who were identified with CKD following project implementation.

These results highlight that without a planned, robust system for identifying and managing clients with CKD a general practice may not have have a clear understanding of this population and whether its clinical needs are being met. Ongoing professional development of health professionals is vital to help emphasise how appropriate management within the PHC setting can delay progression of the disease and needs to be provided regularly. While some intensive effort was initially required to get the systems developed, the GPT could thereafter better care for these clients from within their own resources. The participating clinicians’ view was that the learning process has facilitated an increased understanding of CKD and its management. The utilisation of the dietitian and the importance of dietary requirements in CKD and for those patients on dialysis and impending dialysis are also now better.
understood. Examples of feedback received from patients included comments such as: “I am thankful that I am with a pro-active practice”; “I feel like they take good care of me”; and “I feel better informed about what’s happening and knowing I am being regularly monitored”.

Summary
The participating general practice has demonstrated evidence of engaging in systematic quality improvement activities that have resulted in sustainable systems and processes. Utilising the tools provided in a planned, systematic way has meant outcomes for patients have continued to improve as a result of the earlier detection of those at risk of CKD. This has occurred alongside increased proactive, evidence-based management of those already diagnosed with CKD.

Limitation of the study
The project described in this article is not an academic research study. It is a practical, clinician-led project which has made a measurable difference to clients. However, as such it was not designed to relate to any research studies already published. Other, more practical limitations worth noting included clinician time constraints, which resulted in the need to extend the duration of the project.

References


