National Institute for Health Research

The University of Manchester

Chronic Kidney Disease/Hypertension project

NHS Bury CCG

East Sector, West Sector and Central Sector

August 2016

Executive Summary

A chronic kidney disease (CKD)/hypertension project commenced in August 2014 in the East, West and Central sectors of NHS Bury Clinical Commissioning Group (CCG). Of the **16** practices in these sectors, **9** participated in objective 1 (register accuracy), and **5** practices continued to participate in objective 2 (CKD management). The project aimed to increase the accuracy of CKD coding and improve the management of this patient population.

The IMPAKT™ CKD tool, consisting of a series of MiQuest queries, was installed on each practice system. Two lists of patients were produced; one to verify the existing register, and the other to identify patients who may have CKD but were not coded as such.

Facilitators from National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care Greater Manchester (NIHR CLAHRC GM) visited practices regularly to provide support throughout the project; offering advice on register work and implementing systems and protocols within the practice. Furthermore, a CKD education workshop was provided in January 2015.

The key findings are:

- Objective 1 aimed to halve the gap between recorded and estimated prevalence (using the QICKD modelling tool). Practices identified an additional **225** patients with CKD who had not been previously coded, achieving **88%** of the target (298 patients).
- Baseline prevalence was **4.32%,** at the end of the project this increased to **4.91%**, a significant shift towards the **5.09%** target.
- For objective 2, practices were tasked with testing 75% of CKD patients for proteinuria and managing them to NICE blood (BP) pressure guidance. In the 5 participating practices, **57.7%** of CKD patients had both an ACR test and their latest blood pressure to target in the previous 12 months.
- **93.9%** of all patients on the CKD register (stage 3-5) had a result for BP recorded, whether to target or not, in the previous 12 months. Of those with an ACR test in the past 12 months, **99.5%** CKD patients also had a BP reading in the same time frame.
- In the same 5 practices, at the end of the project, **56.6%** of CKD patients were tested for proteinuria in the previous 12 months**.** This is lower than at baseline and the interim data count (both of which were before the target was lost from QOF), suggesting that ACR testing has not become part of routine annual reviews.

In response to these findings, the following recommendations are suggested as options to further improve the good work conducted during this project:

1. Practices could re-run the IMPAKT™ CKD tool, or our project-specific MiQuest queries, on a regular/annual basis to facilitate maintaining an accurate CKD register.
2. Practices to recode CKD registers with the new CKD QOF codes and ACR levels on an ongoing basis.
3. Practices to continue to recall patients for ACR testing, according to NICE guidance (2), which can be supported using the information provided by CLAHRC in the CKD Improvement Guide.
4. It may be helpful for the CCG to provide a regular/annual update on CKD/hypertension, which could be reinforced during workshops in their annual calendar of events.
5. There may be utility in continuing to promote improvement teams/champions in each practice, as the skills and enthusiasm of the team members who participated in this project could be transferred to other activity and shared wider.
6. Improvement teams should be encouraged to promote of a sense of 'shared clinical ownership' for the diagnosis and management of CKD across the practice.

1. Introduction

Chronic kidney disease (CKD) is increasingly recognised as a global public health problem, affecting an estimated 6% of adults (stages 3-5) in the UK (1). There are very few symptoms associated with CKD, so the emphasis needs to be on early identification and ongoing management to prevent progression of the disease (2). Research has shown however that there is a sizeable confidence gap in the diagnosis and general management of CKD patients in comparison with other more established chronic disease pathways such as diabetes (3). This results in a lack of clarity on best care for the CKD patient population, significant practice to practice variation, lack of communication with patients about their diagnosis and suboptimal ongoing management. However, if CKD is identified early enough, there is the potential to delay or prevent development of established disease in many people by improved management of their condition. CKD is rarely seen in isolation, rather it is often found in association with other co-morbidities (4), and as such needs to be considered in the context of maintaining broader vascular health (5,6,7). CKD also greatly increases the risk of suffering a stroke, heart attack, renal failure and death (4). A 2003 retrospective analysis of all patients newly diagnosed with CKD, found that 35% had died within five years, 46% of which were cardiovascular related (4). Another study identified and subsequently treated 483 patients with CKD stage 4 and 5, in doing so, they estimated they had prevented 28 deaths (8).

The current spend on CKD and related problems represents a large financial burden for the National Health Service (NHS). Programme budgeting data from NHS England showed that Clinical Commissioning Group (CCG) expenditure on renal problems was approximately £587 million in 2013/14 (9). The potential for cost saving therefore is significant. In the Whitfield study (8) it was estimated that earlier identification and treatment resulted in an estimated saving of 97 dialysis years over five years (with a projected cost saving of £2.7m) by slowing disease progression. In a report published by NHS Kidney Care in 2012, it was estimated that in 2009/10 approximately 95% of spend on renal problems was in secondary care, and 5% in primary care. This proportional split is representative across England (10). Yet it is within primary care that this early-stage CKD preventative/improvement work needs to be addressed.

The total renal spent in Bury CCG during 2013/2014 was £1,726,449 (9). Of this:

- £731,052 was spent on scheduled care;
- £647,023 on unscheduled care;
- £137,000 on primary prescribing;
- £119,336 on unbundled care;
- £45,218 on running costs; and
- £46,819 on community/integrated care.

We, the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care Greater Manchester (NIHR CLAHRC GM), recently conducted a CKD audit across Greater Manchester and Eastern Cheshire (with a 60% coverage rate) in collaboration with the

Greater Manchester Academic Health Science Network (GM AHSN) (11). It estimated that across the region there were 16,483 uncoded patients that could be diagnosed with CKD immediately, and 43,027 who warranted further investigation for CKD based on previous low estimated Glomerular Filtration Rate (eGFR) readings. Furthermore, of the 312 practices audited, 28 - 35% of recorded cases of CKD stages 3-5 were not managed to 2008 National Institute for Clinical Excellence (NICE) CKD guidelines (i.e. did not have a measurement of proteinuria status and/or blood pressure recorded in the 12 months preceding the audit). In Bury, a practice coverage rate of 64% was achieved. The estimated CKD prevalence (stages 3-5) for Bury CCG is broadly comparable to the Greater Manchester (GM) region as a whole, with a rate of 7.1% and 6.6% respectively; although significant numbers of patients remain undiagnosed and suboptimally managed.

Over the last six years NIHR CLAHRC GM has been supporting GP practices across the region to improve the accuracy of CKD coding and management of this patient population. With a confidence gap amongst primary care clinicians being recognised as a key issue in the management of CKD, this work also aimed to raise professional awareness of CKD and to provide primary care teams with the knowledge and skills to facilitate ongoing sustainable change in practice. This CKD/hypertension improvement project was established in partnership with Bury CCG and NIHR CLAHRC GM in 2014, with the overarching aim to improve the quality and management and care for people with CKD. This report presents the results from Bury CCG's East, West and Central sectors, completed between August 2014 and March 2016.

2. Methods

2.1 Project Objectives

The CKD/hypertension project had the overarching aim of improving the coding and care for people with CKD. Two specific objectives were set for practices to work towards:

- Objective 1: To halve the gap between recorded and estimated prevalence on practice registers.
- Objective 2: 75% of CKD patients to be tested for proteinuria and managed to NICE blood pressure (BP) targets at project close.

2.2 Clinical Measures/Targets

CKD became part of the Quality and Outcomes Framework (QOF) in 2006, with NICE CKD guidelines following in 2008, which were subsequently updated in 2014 (2).

The target for objective 1 was calculated using the CKD register size for each practice mapped against prevalence estimations (see section 2.3.1).

For objective 2, BP targets were based on NICE guidelines (CG182) (2), which specified different BP targets for patients depending on their ACR test result and diabetes status (Table 1). The frequency of ACR testing was based on the QOF target of 12 months (Table 2). This QOF indicator was retired in April 2015, but as this was used for the baseline data collection, the same target was applied to the interim and end of project data counts for comparison. The BP targets were

kept in accordance with NICE guidelines (2). The ACR testing period was 12 months (in alignment with QOF) from April 2015 to March 2016.

Table 1: Extract from NICE CKD Guidelines ACR monitoring and BP control (2)

1.3.1 Agree the frequency of monitoring (eGFRcreatinine and ACR) with the person with, or at risk of, CKD; bear in mind that CKD is not progressive in many people. [new 2014]
1.6.1 In people with CKD aim to keep the systolic blood pressure below 140 mmHg (target range 120–139 mmHg) and the diastolic blood pressure below 90 mmHg.
1.6.2 In people with CKD and diabetes, and also in people with an ACR of 70 mg/mmol or more, aim to keep the systolic blood pressure below 130 mmHg (target range 120–129 mmHg) and the diastolic blood pressure below 80 mmHg.

Table 2: List of CKD indicator changes for QOF 2015/16

Previous indicator code	New indicator code	Indicator wording	Changes in April 2015
CKD001	CKD005	The contractor establishes and maintains a register of patients aged 18 or over with CKD (US National Kidney Foundation) stage 3 to 5	Wording change
CKD002	-	The percentage of patients on the CKD register in whom the last blood pressure reading (measured in the preceding 12 months) is 140/85 mmHg or less	Retired
CKD003	-	The percentage of patients on the CKD register with hypertension and proteinuria who are currently treated with an ACE-I or ARB	Retired
CKD004	-	The percentage of patients on the CKD register whose notes have a record of a urine albumin:creatinine ratio (or protein:creatinine ratio) test in the preceding 12 months	Retired

2.3 Project Design

The project consisted of a series of interlinked activities. Figure 1 provides an overview of the stages.

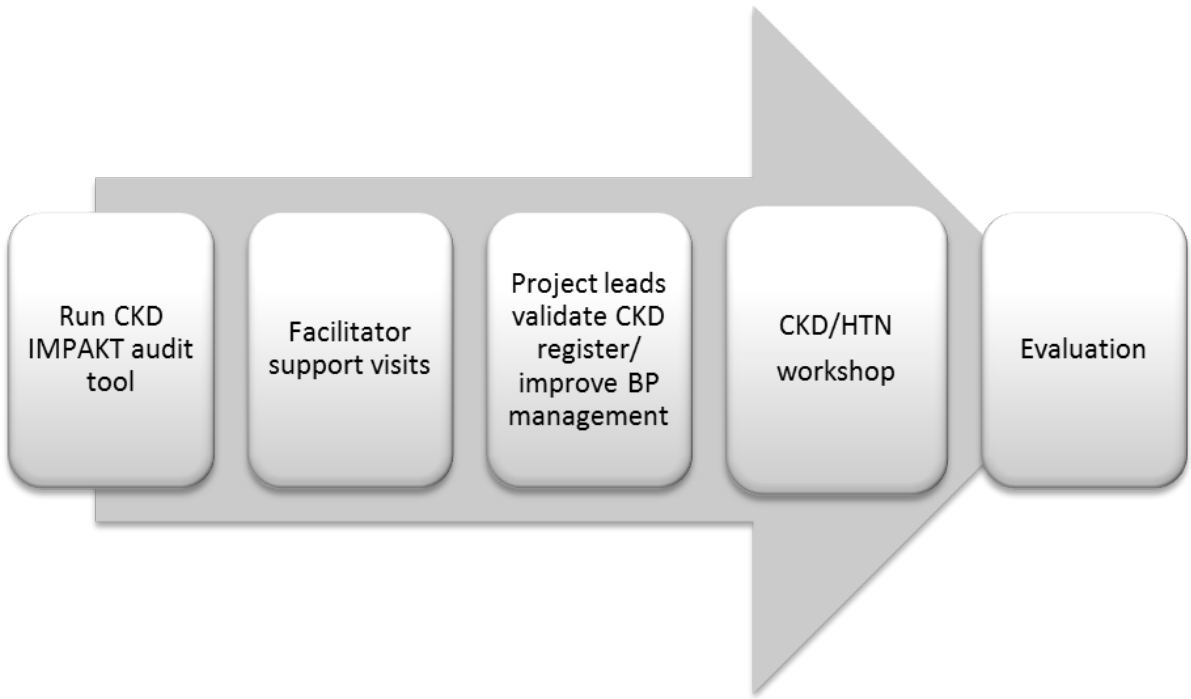

Figure 1 Project stages

2.3.1 Prevalence Estimation

In the first phase of the project, the Quality Improvement in Chronic Kidney Disease (QICKD) modelling tool was used to estimate the expected prevalence using the over 18 years age/sex profile for each practice. This tool was developed by Bradford Primary Care Trust (PCT) using the outcomes of the QICKD study (12). These estimated figures provided a prevalence target for practices to work towards.

2.3.2 IMPAKT™ CKD Audit Tool

IMproving Patient care and Awareness of Kidney disease progression Together (IMPAKT™) is a MiQuest based audit tool that extracts data from primary care clinical systems. Two lists of patients are produced; the first includes recommendations for patients who may have been coded with CKD in error or inaccurately coded in relation to stage of CKD (i.e. register verification), the second identifies patients not on the CKD register but who had recorded eGFRs indicative of CKD and those requiring further investigation (i.e. case finding).

The tool was installed at each practice. In addition to the expertise of the NIHR CLAHRC GM facilitation team, the IMPAKT™ CKD improvement guide was also provided to practices to support

this work. The guide contains resources such as CKD Read codes, protocol examples and templates of invitation letters to use when recalling patients for diagnostic tests.

2.3.3 Register Verification and Case Finding

At an initial meeting, each practice was asked to select an improvement team (ideally including a mix of staff disciplines, usually involving a lead GP, practice nurse and admin team member). Subsequently, the NIHR CLAHRC GM facilitation team continued to meet with practice improvement teams on a regular basis to support register validation and case finding work. The frequency of visits was largely driven by the practices themselves, and dependent upon their progress and staff availability etc.

Each practice worked through the lists of patients generated by the IMPAKT™ tool. In order to validate the existing CKD register, case find and improve BP management (see Table 1) the following actions were required:

- Patients coded with CKD in error were removed from the register.
- CKD stage coding was updated where necessary, based on latest eGFR data (see Table 3).
- Patients found to have eGFRs indicative of CKD, but were not coded on the register, were investigated in order to diagnose or exclude CKD.
- CKD patient records were checked to ensure they had an ACR test within the last 12 months (see Table 4 for values).
- Requests were made for further diagnostic tests where necessary.
- Patients with proteinuria were identified (based on ACR testing) and coded accordingly.
- CKD protocols were updated and developed.

Table 3: Extract from NICE CKD Guidance GFR categories (2)

GFR category	GFR (ml/min/1.73 m 2)	Terms
G1	>90	Normal or high
G2	60–89	Mildly decreased*
G3a	45–59	Mildly to moderately decreased
G3b	30–44	Moderately to severely decreased
G4	15–29	Severely decreased
G5	<15	Kidney failure
* Relative to young adult level Abbreviations: CKD, chronic kidney disease; GFR, glomerular filtration rate Reprinted with permission from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group (2013) KDIGO 2012 clinical practice guideline for the evaluation andmanagement of chronic kidney disease. Kidney International (Suppl. 3): 1–150		

Table 4: Extract from NICE CKD Guidance ACR values (2)

ACR Category	ACR (mg/mmol)	Terms
A1	<3	Normal to mildly increased
A2	3 - 30	Moderately increased*
A3	>30	Severely increased**

* Relative to young adult level

** Including nephrotic syndrome (ACR usually >220 mg/mmol) Abbreviations: ACR, albumin:creatinine ratio; CKD, chronic kidney disease

2.3.4 Clinical Education Workshop

An educational workshop was provided by the NIHR CLAHRC GM team in January 2015, led by a renal consultant and a practice nurse, to enhance practices understanding of the importance of early diagnosis and best practice treatment of CKD. The workshop was also used as a forum for practice teams to share learning and good practice. In addition, it provided an opportunity for teams to direct specific questions to experts and feedback on their progress.

The workshop was represented by all the practices who engaged in this project.

2.3.5 Project Timeline

Initial meetings with GP practices took place between August 2014-October 2014 (Figure 2). Baseline data collection was undertaken at the same time to estimate practices' prevalence. Alongside these meetings with practices, the IMPAKT™ CKD audit tool was installed. Interim data was collected in July 2015, and end of project data was collected April 2016.

In April 2015 the QOF indicators CKD002, CKD003, and CKD004 were retired (2).

2.3.6 Interim and Final Data Count

In July 2015 and April 2016 an interim and final data count respectively was performed at each practice. This involved running a set of MiQuest queries to extract patient level data about BP results, ACR testing and CKD coding and the number of patients added and removed during the project.

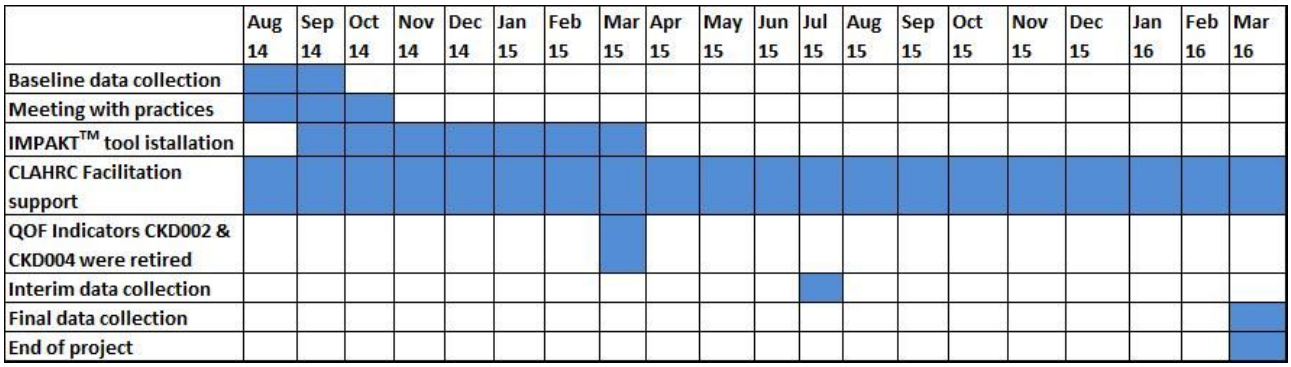

Figure 2 Project Gantt chart

3. Results

3.1 Participating GP Practices

The project was offered to all **18** practices in the East, West and Central Sectors. All practices initially agreed to participate, although several practices withdrew throughout the course of the project, and **3** practices merged (leaving **16** in total across the Sectors). Unfortunately, it is not possible to pinpoint exact dates when each practice withdrew, as most did not inform NIHR CLAHRC GM/the CCG, but simply failed to respond to contact, or requested that they did not want us to contact them till a later date (for example after QOF or CQC). Therefore objective 1 data (register accuracy) presented in this report is from **9/16 (56%)** practices who continued to participate. **5/16 (31%)** continued to work on objective 2 (management of CKD) until the end of the project.

3.2 Predicted Prevalence

The baseline prevalence of CKD was predicted based on the practice register size using the QICKD tool (see section 2.3.1), this was compared to the actual figures from each practice (Table 5). Overall, the baseline prevalence was **4.32%** with a target prevalence of **5.09%** (which is 50% of the estimated CKD prevalence, as objective 1 aimed to *halve* the gap between recorded and estimated prevalence). Collectively, the **9** participating practices needed to identify an additional **293** patients to achieve this target.

Table 5 Baseline data and prevalence target modelling using the QICKD tool

Practice	Baseline population (>18s)	Baseline CKD register (3-5)	Baseline preva -lence (%)	Target CKD register (3-5) [a]	Target preva -lence (%) [b]	Number of patients to find [c]
East Sector						
Rock Healthcare	2024	30	1.48%	37	1.83%	7
Dr Subbiah (Ribblesdale)	3525	321	9.11%	304	8.62%	-17
Dr Woodcock (Ribblesdale)	6439	368	5.72%	454	7.05%	86
Dr Jackson Peel	8106	250	3.08%	347	4.28%	97
Knowsley Medical Centre	2688	168	6.25%	166	6.18%	-2
Walmersley Road Medical Centre	1898	34	1.79%	47	2.48%	13
Huntley Mount Medical Centre	2254	61	2.71%	89	3.95%	28
West/Central Sector						
Spring Lane MC	4780	129	2.70%	181	3.79%	52
Radcliffe MC	6269	280	4.47%	309	4.93%	29
Summary for East, West and Central Sectors						
Total (n=9)	**37,983**	**1,641**	**4.32%**	**1,934**	**5.09%**	**293**

a. Target CKD register (3-5) – target size of the CKD register per practice on completion of the project.
b. Target prevalence (%) – to halve the gap between baseline and estimated prevalence.
c. Number of patients to find - change needed to halve the gap between the baseline and estimated prevalence and achieve the target prevalence in accordance with objective 1.

Table 6 Key to practice identities

P83005	RIBBLESDALE GP-DR SUBBIAH
P83007	RADCLIFFE MEDICAL PRACTICE
P83015	RIBBLESDALE GP-DR WOODCOCK
P83021	PEEL GPS-DR JACKSON
P83024	KNOWSLEY MEDICAL CENTRE
P83029	SPRING LANE SURGERY
P83611	WALMERSLEY ROAD MEDICAL PRACTICE
P83621	HUNTLEY MOUNT MEDICAL CENTRE
Y02755	ROCK HEALTHCARE LIMITED

3.3 Objective 1

Objective 1 was to halve the gap between the recorded and the estimated CKD prevalence. To meet objective 1, the 9 practices collectively had to find an additional **293** patients to add to their CKD registers.

At the start of the project, the number of patients on CKD registers for the 9 practices was **1,641** patients, with a prevalence of **4.32%**. At project end, this figure had increased to **1,866** patients, with the prevalence rising to **4.91%.** The additional **225** patients coded with CKD represent an increase in prevalence of **0.59%** (**88%** of the target).

Four practices achieved their individual prevalence targets and the majority of the remaining practices were close, although the number of patients to be added per practice ranged significantly (from **-17 to +97**). It is important to highlight that in order to verify registers practices also had to remove patients who were incorrectly coded, therefore the total number of new patients identified is actually higher than these overall target figures. Figure 3 shows the change in number of patients on each practice register at baseline (August 14 - March 15), interim data collection (July 2015), at the end of the project (March 2016), and the target.

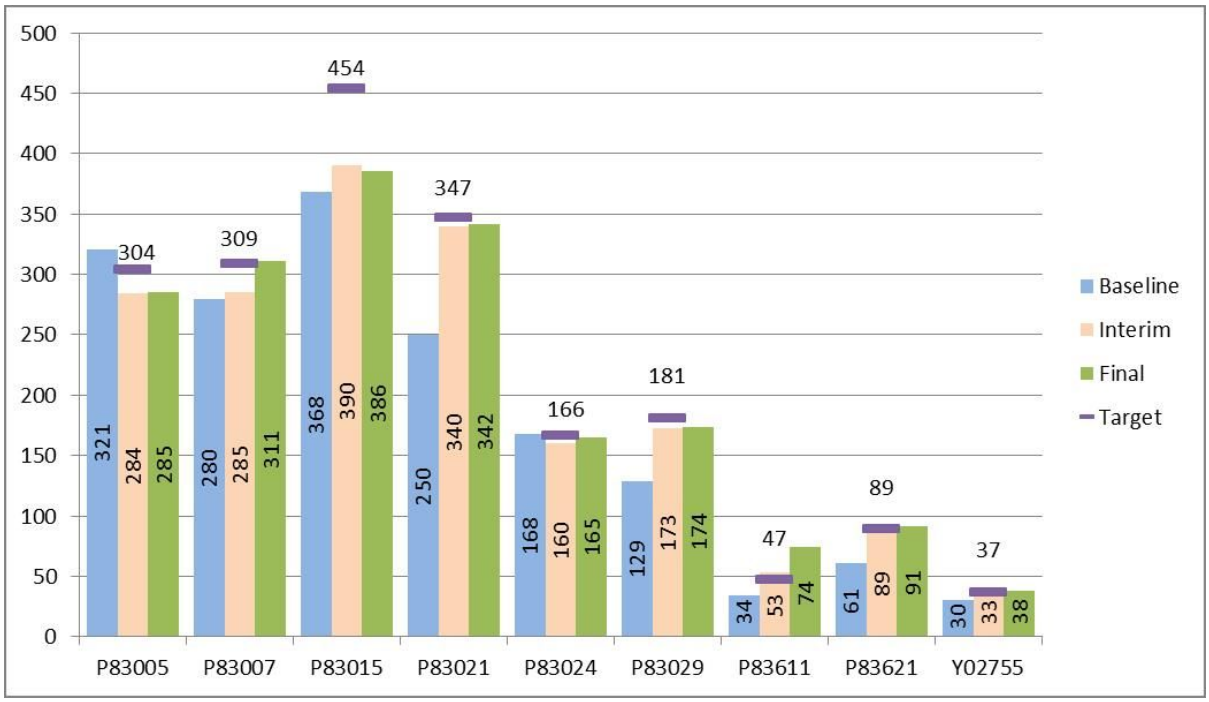

Figure 3 The number of patients on CKD registers at baseline, interim and final data counts

Figure 4 details the number of patients added and removed on each practice's CKD register between the interim and final data collection points. For example, practice P83015 added **22** new patients but also removed **26** inaccurately coded patients, resulting in an overall loss of 4 patients from the register. Therefore although the prevalence target was not reached in this practice, the accuracy of the register was improved. Unfortunately this data was not available at baseline as the only data available at that time was from QOF which only recorded the total number of patients on the CKD register.

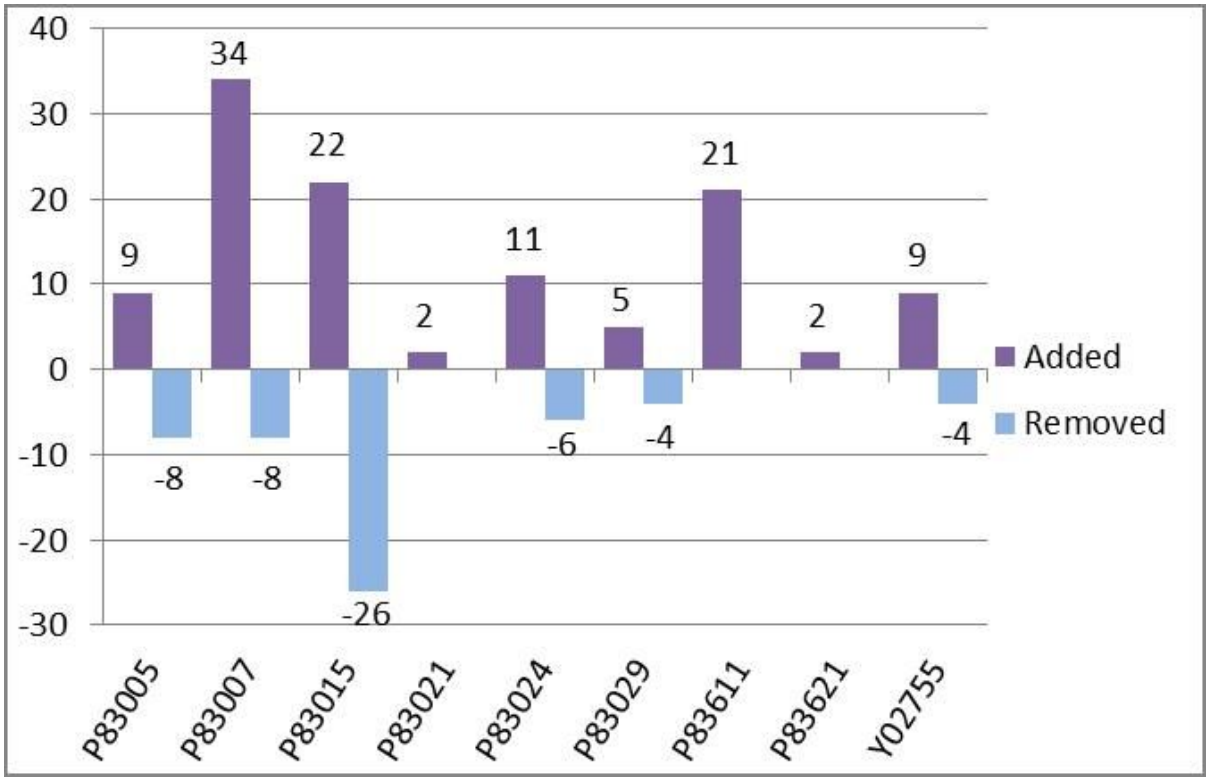

Figure 4 The number of patients added and removed from CKD registers between the interim data count and final data counts

3.4 Management

Hereafter the data is shown for the 5 practices who continued to participate in objective 2; improved management of CKD following NICE guidance (2), focussed on proteinuria testing and BP control (see Tables 1 and 4). We have reported on performance for each of these elements individually, in addition to the combined data for objective 2 (ACR testing and BP to target in the previous 12 months).

3.4.1 Proteinuria Testing

The percentage of patients ACR tested at baseline was **66.8%**, this increased to **74.5%** by the interim data count, but dropped to **56.6%** by the end of the project (Figure 5)**.**

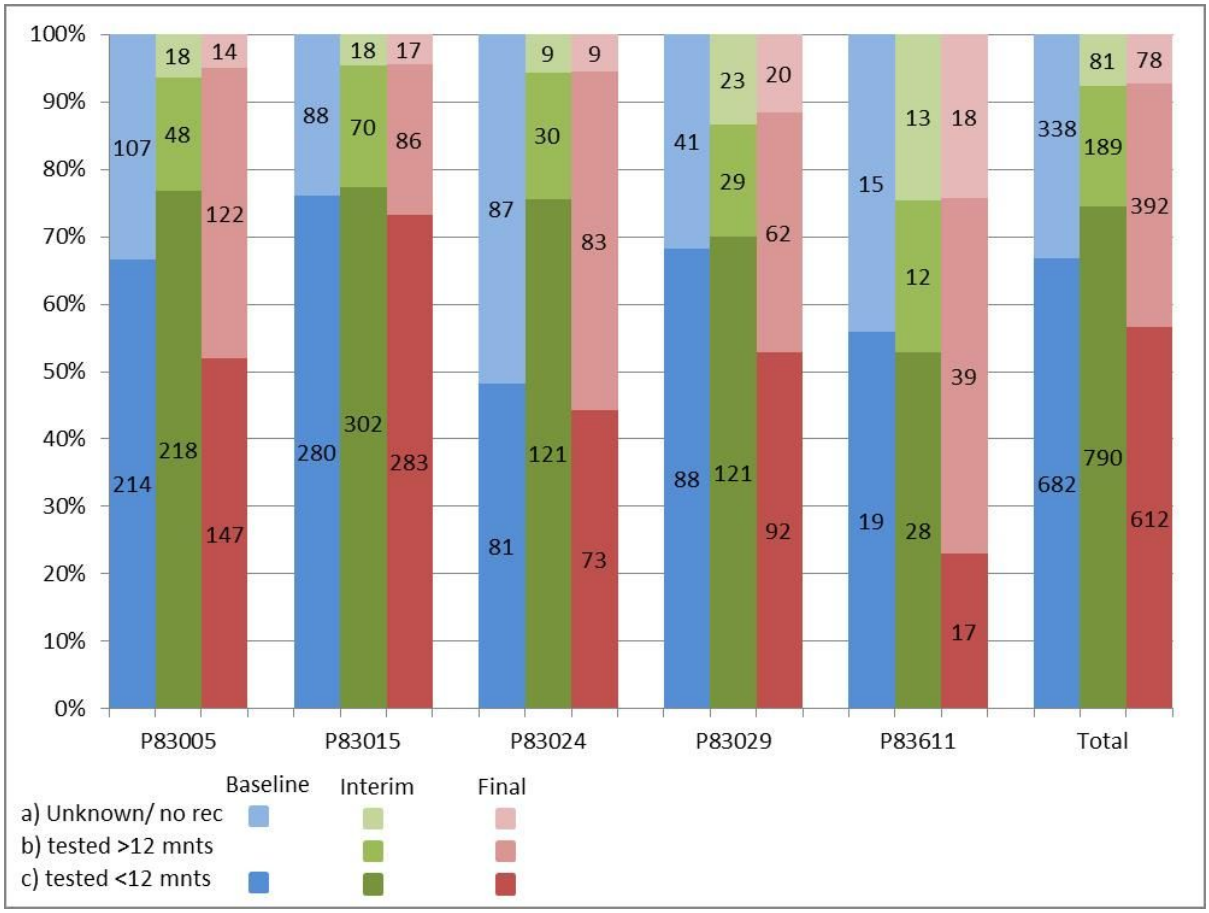

Figure 5 Proportion of CKD patients with a) ACR test status unknown, b) ACR tested prior to the last 12 months, and c) tested in the previous 12 months. Percentages are relative to register size at the given time point.

Category 'a)' in Figure 6 indicates where there was no record of an ACR test being performed. At baseline, this also includes any test that was performed prior to 12 months, as data on ACR testing >12 months was not collected at this time-point (hence the large proportion of patients in this category.

NICE CKD guidance (2) does not stipulate the frequency of ACR testing, but instead recommends that this is decided in consultation with GPs and individual patients. Therefore in addition to the analyses above (based on a cutoff of 12 months testing), for comparison, analysis on ACR testing with a cutoff of 15 months was also performed. At final data count **64.9%** of the general CKD register (stages 3-5) had a proteinuria test within the previous 15, months compared to **56.6%** using the 12 month cutoff.

3.4.2 Blood Pressure to Target

Overall in the 5 participating practices, **57.0%** of CKD patients achieved target BPs on the last reading in the previous 12 months by the end of the project (Figure 6). This was a slight decline since the interim data count (**57.7%**), although the register size had increased. Unfortunately there

is no comparative baseline data for these measures as only QOF BP data (which only has a single target of 140/85 for patients both with and without proteinuria) was available at the time. In the absence of QOF data, the interim and final data collection was performed using specifically designed MiQuest queries that enabled NICE BP guidance (2) analysis.

The rate differed however depending on the patient cohort; **41.3%** of patients with diabetes achieved target BPs, **48.9%** of CKD patients coded 'with proteinuria', and **58.4**% of CKD patients coded 'without proteinuria' (Figure 6). For patients with diabetes this represents a modest improvement since the interim data count. Patients with diabetes, and patients with proteinuria with an ACR of ≥70 mg/mmol, are higher risk, and therefore have a stricter BP target (Table 1).

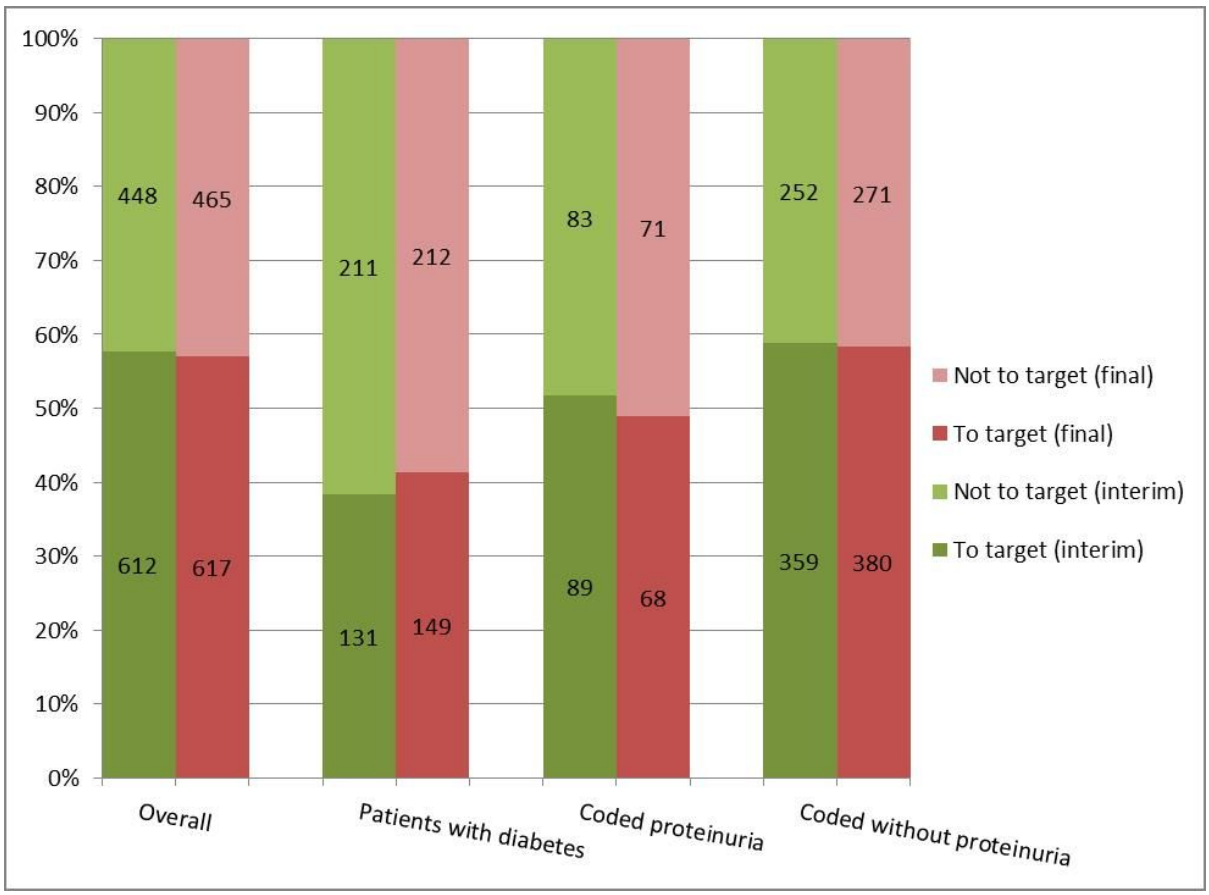

Figure 6 Percentage of patients with last BP to target in the previous 12 months at the interim and final data counts

93.9% of all patients on the register (stage 3-5) in these practices had a result for BP recorded, whether to target or not, in the previous 12 months. Of those with an ACR test in the past 12 months, **99.5%** of Bury CCG CKD patients also had a BP reading in the same time frame, higher than the **93%** reported for Greater Manchester and Eastern Cheshire as a whole in a recent audit (11).

3.4.3 Objective 2 - CKD Patients ACR Tested and with BP to Target

NICE advises that CKD patients should not only be tested for proteinuria, but also have their BP managed accordingly (2). For patients with high ACR values (≥70 mg/mmol) and patients with diabetes the target BP is <130/80 mmHg, whereas those who have an ACR below 70 mg/mmol the target BP is <140/90 mmHg (Table 1). Therefore, patients need 1) an ACR test, and also 2) a documented BP to target to achieve objective 2.

At the final data count, the number of patients tested for proteinuria in the previous 12 months, with a BP to target, at the last reading, was **57.7%** (Figure 7)**.** This represents a decrease of **0.5%** since the interim data collection.

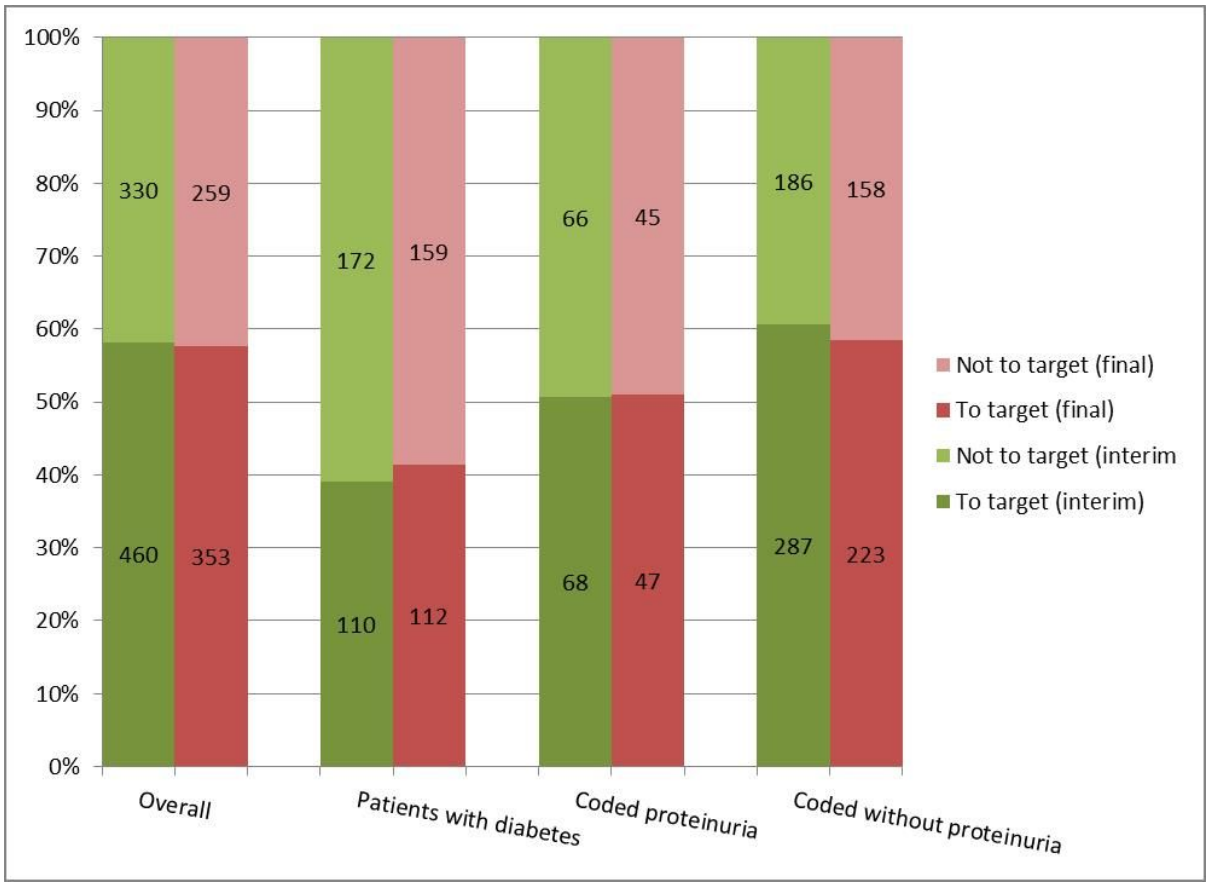

Figure 7 Percentage of patients with an ACR test in the past 12 months, who had BP to target at last reading

3.4.4 BP Management of CKD Patients Coded 'with Proteinuria'

At the end of the project there were a total of **139** CKD patients coded 'with proteinuria' on practice registers. Figure 8 shows the number of patients in this cohort with blood pressures managed to NICE guidelines (2)**.** It is important to highlight that in some practices the numbers of patients coded with proteinuria was low (ranging from **2** patient to **72** patients). Overall **33.8%**

these patients were managed to NICE guidance (2). This figure is higher than the results for Greater Manchester and Eastern Cheshire as a whole (11), that showed only **29%** of patients with CKD and proteinuria had BPs to NICE (2) targets.

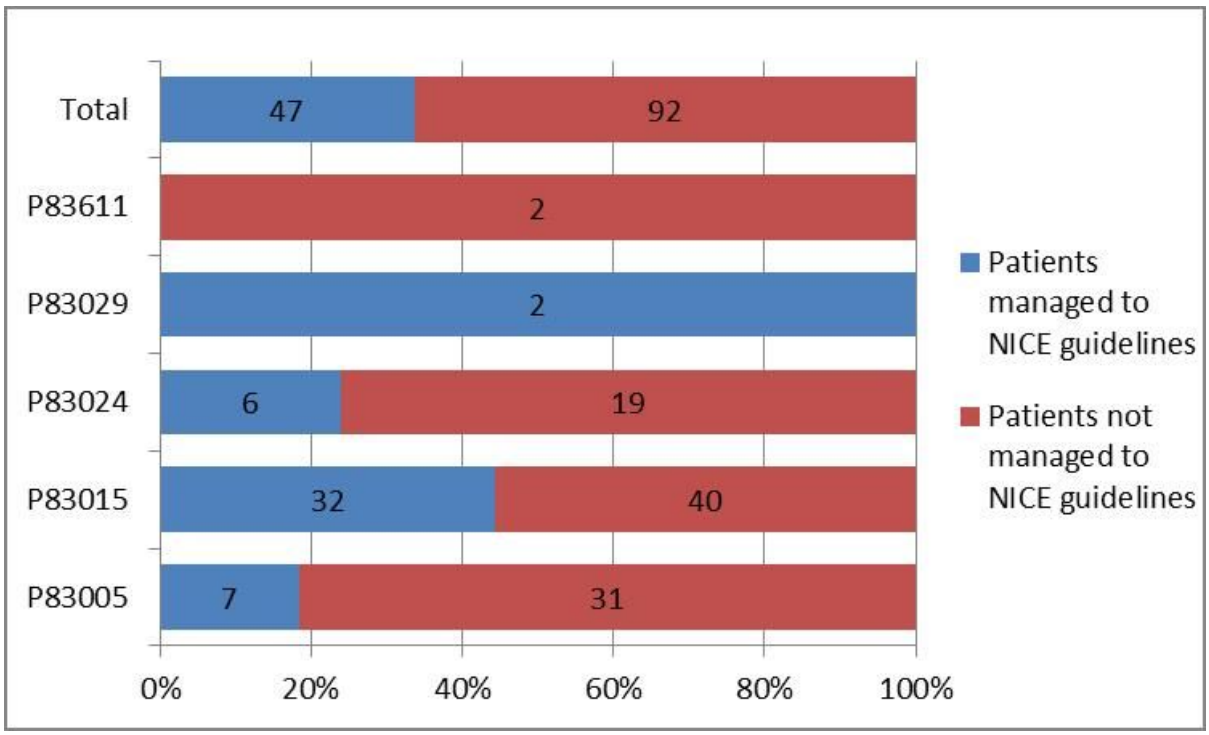

Figure 8 The number and percentage of CKD patients coded 'with proteinuria' with BPs managed to NICE targets (2)

3.4.5 BP Management of CKD Patients with Diabetes

The analysis from prospective clinical trials shows that a lower level of diastolic blood pressure for patients with diabetes results in a reduction in cardiovascular events and slows the decline in renal function (13, 14, 15). Lower BP targets in patients with diabetes also reduces their cardiovascular risk (14, 15, 16). 2014 NICE guidance (2) recommends stricter BP (<130/80) control for CKD patients who also have diabetes. Figure 9 shows the breakdown per practice of CKD patients with diabetes managed to NICE guidance (2). The percentage of patients with CKD and diabetes managed to target varied between **24.2%** and **35.5%** across practices with an overall total of **31.0%** of patients in this cohort to target.

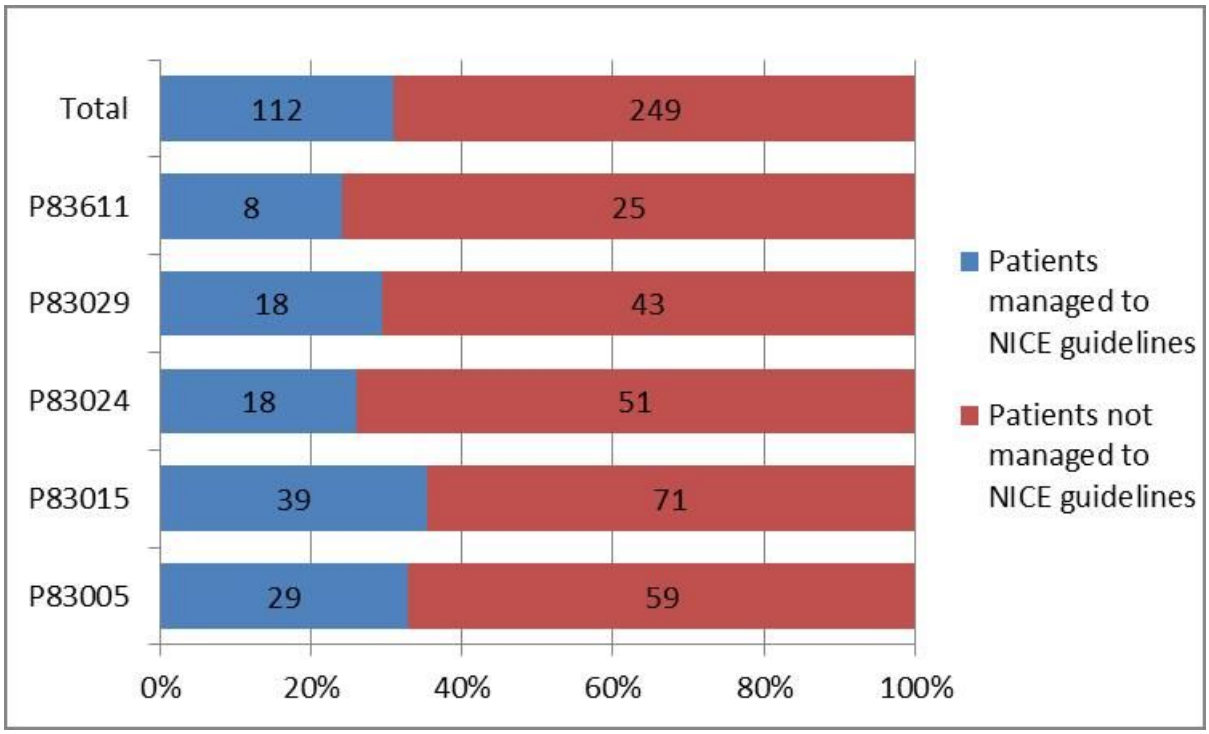

Figure 9 The number and percentage of CKD patients with diabetes with BPs managed to NICE target (2)

It should also be highlighted that data related to the frequency of eGFR testing shows that practices are reviewing CKD patients regularly, with **79.9%** of patients having an eGFR test in the previous 12 months.

4. Discussion

In April 2015 three of the four QOF indicators (Table 2) were removed, related to; the percentage of CKD patients with blood pressures to a target of <140/85 mmHg, the percentage of patients on the CKD register with hypertension and proteinuria treated with an angiotensin converting enzyme inhibitor (ACE-I) or an angiotensin ll receptor antagonist (ARB), and also the percentage of patients on the CKD register ACR tested in the previous 12 months. The remaining CKD-related QOF indicator was to simply maintain a CKD register. The anecdotal feedback from several practices during the course of the project suggests that this change, combined with competing priorities, was a significant driver in their decision to withdraw from this piece of work. In light of this, it is anticipated that the QOF change may also have had an impact on the extent of activity in the practices who continued to engage. The limited improvement observed during this project for objective 2, compared to previous experience delivering this piece of work in other areas, suggests that removal from QOF was perhaps premature. As frequency of proteinuria testing increased in the initial stages of the project, and then dropped to below baseline figures by the end of the

project, this might suggest that (at least in the 5 participating practices) ACR testing has not become part of routine annual reviews.

NICE guidance (2) does not stipulate the frequency of ACR testing, but instead recommends that this is decided in consultation with GPs and individual patients. As the baseline data was collected prior to April 2015 (pre-QOF changes), we have used a 12 month cut off to align with the previous QOF target for the interim and final data sets also. Some information describing ACR testing using a 15 month cut off has also been included as a comparison, which and shows an increase in number of patients tested, suggesting the testing is being done, but perhaps with less frequency than previously.

The percentage of CKD patients with proteinuria with BPs to target in Bury CCG is similar to previous CLAHRC CKD projects (17) but higher than greater Manchester and Eastern Cheshire region (11).

5. Conclusions

The CKD/hypertension project in Bury CCG has raised awareness of CKD and educated healthcare professionals in the importance of managing the condition to best practice. It has been successful in identifying a significant number of additional CKD patients who were previously undiagnosed, allowing their ongoing care needs to be better monitored. The work has also highlighted areas of CKD management which would benefit from improvement. The main conclusions which can be drawn from this project are:

- An additional **225** patients were added to CKD registers, resulting in a closure between the actual and estimated prevalence figures and improving the accuracy of CKD registers.
- **57.7%** of CKD patients had a BP to target in the last 12 months and had been ACR tested - an area that would benefit from further improvement.
- For CKD patients coded 'with proteinuria' (See Table 1) **33.8%** had BPs managed to NICE targets in the previous 12 months. This is similar to all previous CLAHRC CKD projects but higher than Greater Manchester and Eastern Cheshire as a whole.
- For patients with CKD and diabetes **31.0%** had blood pressures managed to NICE guidance in the previous 12 months.

6. Recommendations

The following recommendations are suggested in an attempt to continue to improve the management of CKD and also to sustain the progress made so far:

- Practices could re-run the IMPAKT™ CKD tool, or our project-specific MiQuest queries, on a regular/annual basis to facilitate maintaining an accurate CKD register.
- Practices to recode CKD registers with the new CKD QOF codes and ACR levels on an ongoing basis.

- Practices to continue to recall patients for ACR testing according to NICE guidance (2), which can be supported using the information provided by CLAHRC in the CKD Improvement Guide.
- It may be helpful for the CCG to provide practices with a regular/annual update on CKD/hypertension that could be reinforced during workshops in their annual calendar of events.
- There may be utility in continuing to promote improvement teams/champions in each practice, as the skills and enthusiasm of the team members who participated in this project could be transferred to other activity and shared wider.
- Improvement teams should be encouraged to promote a sense of 'shared clinical ownership' for the diagnosis and management of CKD across the practice.

7. Limitations

Throughout the project timeline, there have been various unforeseen factors which have affected the progress of the work, as follows:

IMPAKT installation

In order to begin work on the project, the North West Commissioning Support Unit (CSU) was tasked to install the IMPAKT tool onto all participating practices computer systems. This task was crucial to the project, as until IMPAKT had been installed, practices could not start the project. Based on the agreement between NIHR CLAHRC GM and NWCSU, and direct previous experience from delivery of this work in other CCGs, it was anticipated that IMPAKT installation would take approximately 2-4 weeks. However, due to unforeseen personal issues within the CSU team, IMPAKT installation was delayed in most of the practices, some by up to 3-4 months. This resulted in a significant delay in project activity starting.

QOF year commitments

In most cases, the delay in IMPAKT installation then postponed the project from starting until November/December 2014. In most practices, this period of the year is challenging due to the Christmas break and preparations for the end of the QOF year. Several practices expressed their wish to delay start of the project until after March 31st 2015.

Retirement of CKD QOF indicators

As previously mentioned, 3 of 4 QOF indicators were retired in April 2015, removing the financial incentive to encourage practices to actively engage with this improvement work.

CQC inspections

Care Quality Commission (CQC) inspections took place between May and June 2015. Approximately 9 practices requested that project work be put on hold whilst preparations for CQC inspections were taking place.

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9. Acknowledgements

NIHR CLAHRC GM would like to thank the 9 practices in East, West and Central Sector who participated in this project. NIHR CLAHRC GM would also like to acknowledge the support of Bury CCG in delivery of this piece of work.

This project was funded by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care (NIHR CLAHRC) Greater Manchester. The views expressed in this article are those of the authors and not necessarily those of the NHS, NIHR or the Department of Health.