# Innovating for Improvement

### Development and evaluation of a renal learning health system across inner east London.

Clinical Effectiveness Group (CEG), Queen Mary University of London





#### About the project

#### **Project title:**

Development and evaluation of a renal learning health system across inner east London.

#### Lead organisation:

Clinical Effectiveness Group (CEG), Queen Mary University of London

#### Partner organisation(s):

Barts Health NHS Trust London South Bank University Tower Hamlets CCG

#### **Project lead(s):**

Dr Sally Hull, Queen Mary University of London Dr Neil Ashman, Renal Department, Barts Health NHS Trust Professor Nicola Thomas, South Bank University Helen Rainey, Specialist Renal Nurse. Barts Health NHS Trust Sec Hoong, Community Kidney Service Manager, Barts Health NHS Trust

#### Contents

Part 1: Abstract	3
Part 2: Progress and outcomes	4
Part 3: Cost impact	13
Part 4: Learning from your project	15
Part 5: Sustainability and spread	19
Appendix: Resources and appendices	24
Appendix 2: Project finance	26

#### Part 1: Abstract

Chronic Kidney Disease (CKD) affects 5% of the adults, with higher rates in multiethnic and socially-deprived populations. Our intervention was *the east London community kidney service*, serving a population of 1.2 million. Conceived as a renal learning health system, extending across primary and secondary care, with data providing feedback to improve the delivery of care and clinical performance.

The two innovative components include:

- A virtual CKD clinic, in which nephrologists can see the entire GP patient record (with consent) and enter management suggestions.
- A suite of IT tools for practices to improve identification and management of CKD.
   A novel 'trigger tool' alerts GPs to cases of possible CKD progression.

Major impacts include:

- A reduction in wait time for a specialist opinion from 64 to 5-10 days
- Only 20% of patients referred to the virtual clinic require a hospital appointment
- Significant improvements to GP identification and management of CKD.
- Nurse led self-management education for patients
- 96% of GPs were satisfied with the clinical advice they received.

The project successfully negotiated engagement from all CCGs, with rapid sign on by local practices. Our evaluation illustrates the factors which enable practices to make effective use of IT innovations such as the CKD trigger tool.

We have also linked GP and hospital clinic data to explore the primary care predictors of late presentation to renal dialysis.

The service is now 'business as usual'. This process was helped by the established track record of the Clinical Effectiveness Group, and by effective hospital and CCG leadership.

#### Part 2: Progress and outcomes

#### Intervention and innovation

This project used the concept of a learning health system to build and evaluate a community kidney service in east London. This involves the use of anonymized patient data to provide rapid feedback to improve the delivery and clinical performance of the system. All 130 GP practices in the three inner east London CCGs of Tower Hamlets, Newham and City and Hackney joined the service intervention, 37 practices in a fourth CCG (Waltham Forest) acted as a comparison group, becoming part of the service at a later stage.

The system wide changes to the delivery of renal care had two broad components described below. This report focuses on evaluation of the innovative virtual CKD hospital clinic, and the use of primary care data to improve recognition and management of CKD. To assess the impact of the 'trigger tools' we adjusted our evaluation plan to include eight semi-structured interviews with GPs and primary care staff.

#### Components of the east London Community Kidney Service project

- 1. The virtual CKD hospital clinic supports electronic referrals from GPs into a locality facing service. Development involved the introduction of the EMIS Web platform to the renal department, and sign up by all practices to a data sharing agreement to enable nephrologists to view the complete primary care electronic health record (EHR), with informed patient consent. Nephrologists document advice in the shared record which all GP practice clinicians can view. GPs are advised when the notes are reviewed by an alert within the EMIS workflow module. The clinic has a short response time (5-10 days) to ensure clinical advice for GPs is timely. The nephrologists triage the minority of patients who require further investigation into traditional face to face out-patient clinics. Each CCG community clinic has assigned nephrologists, with the aim of building clinical relationships between GPs and hospital specialists.
- 2. A package of IT tools which support practices to identify patients with CKD, ensure diagnostic Read coding, and encourage improvements to blood pressure and cardiovascular management. A renal trigger tool (see below) alerts GPs to patients with a falling estimated glomerular filtration rate (eGFR). The Clinical Effectiveness

Group (CEG) provides regular practice-based facilitation, which includes training and feedback on performance. Additional renal specific clinical facilitation, focused on CKD management, was offered to practice teams in the lowest decile of CKD coding. Throughout the first year of the service practice and CCG wide education aimed to familiarize practice staff with the service.

There was a regular programme of patient education for patients referred into the service, including group and one to one sessions.

We also undertook a case study to examine primary care characteristics and antecedent care of the 30% of patients with end stage renal disease who start renal dialysis unplanned.

Project	Data chosen for evaluation	Data sources
component		
Virtual CKD clinics	Appointment numbers	Care records system (CRS)
at Barts Hospital	Wait time for specialist review	Care records system (CRS)
	Conversion from virtual to OPD clinic	Renal department data
	Clinic outcomes	Renal department data
	Attendance at patient education	Renal department data
	Initial GP response to changes	GP survey and interviews
	<ul> <li>Nephrologist response to changes</li> </ul>	Interviews
General Practice IT	% CKD cases with diagnostic Read code	East London CKD dashboard
renal tools	% cases with BP to target	East London CKD dashboard
	% cases on lipid lowering medication	East London CKD dashboard
	GP use of renal trigger tools	CCG returns, interview data
Unplanned starts to	Audit of 1000 dialysis starts at Barts Health	Renal department data
renal dialysis	Primary care data on coding and management in	Linked to
	the year prior to dialysis.	anonymised GP records

**Evaluation plan and data sources** 

Data on appointment numbers, cost and type were collected from the care records system (CRS) at Barts Health. This was supplemented by nephrology department data

on transfers between virtual and traditional appointments, and reviews in the virtual clinics. This data was the most difficult to access and interpret, as the virtual clinic was a novel development.

Anonymised data on practice CKD diagnostic coding and disease management were collected quarterly using EMIS Web at CEG. Data was collated into CCG and practice level dashboards and shared with commissioners and practice staff. A quarterly CKD newsletter (see appendix) provided further feedback to practices on coding performance.

METRIC	CCG 1	CCG 2	CCG 3	CCG 4
1. Proportion of CKD cases coded	87%	80%	54%	49%
2. Proportion of CKD cases, with diabetes, coded	88%	83%	59%	60%
3. CKD with BP below 140/90	74%	71%	64%	55%
4. CKD and diabetes, with BP below 130/80	43%	39%	36%	31%
5. Adults with CKD on lipid- lowering medication	80%	76%	73%	64%

East London CKD Dashboard Jan 2017 21,560 CKD cases, four CCGs

The *falling eGFR trigger tool* was run monthly in practices. The tool lists for GPs any patient where the latest eGFR is <60 and there has been a drop of 10ml/min from the preceding test. The tool was developed in one practice and tested across the pilot CCG prior to full implementation.

Practice trigger tool for patients with a falling eGFR									
Import Report File		Add late:	st data	<b>`</b>		Export to xis		Email to	cce o 🗹
								'he latest patien	ts are added to the top of the list
				Ju	ne 2015	i			
Eull Name	EMIS no	Usual	L	atest eGFR	Pre	vious eGFR	Fall in oGEP	Referral to CKD	Reflection on clinical
Full Name	EMIS IIO.	GP	Value	Date	Value	Date	- Fall III eGFK	clinic?	management
Patient Name - 1	EMIS no. 1	SH	45	11-May-2015	55	02-Apr-2015	10	C Yes C No	
Patient Name - 2	EMIS no. 2	JP	38	15-May-2015	50	13-Dec-2014	12	C Yes C No	
Patient Name - 3	EMIS no. 3	КВ	40	23-May-2015	51	19-Aug-2014	11	C Yes C No	
				M	ay 2015				
Eull Name	EMIS no.	Usual	al L	Latest eGFR		vious eGFR	Fall in eGER	Referral to CKD	Reflection on clinical
		GP	Value	Date	Value	Date		clinic?	management
Patient Name - 1	EMIS no. 1	SH	45	02-Apr-2015	55	02-Apr-2015	10	C Yes C No	
Patient Name - 2	EMIS no. 2	JP	38	13-Apr-2015	50	13-Dec-2014	12	C Yes C No	
Patient Name - 3	EMIS no. 3	КВ	40	19-Apr-2015	51	19-Aug-2014	11	C Yes C No	

The GP trigger tool interface.

The final column 'Reflection on clinical management', invites clinicians to enter free-text.

#### Impact of the changes following the project intervention

#### Impact of the virtual renal clinic

Referrals to the virtual clinic rapidly exceeded the previous rates of traditional OPD referral. We found that less than 15% of referrals required a face-to-face appointment. For the first time nephrologists were able to see **ALL** the lab tests and GP consultations. GPs were able to get virtual advice rapidly.

During 2015 the average wait for a renal clinic appointment was *64 days*. Using the e-clinic the average time to get nephrology advice is *5-10 days*.



First appointment in general nephrology, numbers of virtual clinic and follow-up appointments for all participating practices in east London



We also measured the '*hidden work*' of virtual clinics by observing the repeated virtual reviews done by nephrologists. More than 30% of initial referrals had a second virtual review, and 30% of these had a third review. This work is not easily captured by the hospital system.

## Duration in days from first referral to subsequent virtual follow up clinic appointments for the period Apr 2017-Mar 2018 for all four CCGs (n=2955)



We used hospital data to show clinic outcomes at each virtual appointment.

#### Virtual Clinic outcomes by first and follow up virtual appointment for the period April 2017 March 2018 for all four CCGs



Some patients were invited from the virtual clinic to attend nurse-led renal education and self-management sessions. Attendance rates at the one-on-one sessions were better than for the groups, hence these will continue.



#### Group education, numbers attended and DNAs



#### One-on-one education, numbers attended and DNAs

Survey data from Tower Hamlets GPs (the pilot locality) captures early perceptions of the service. Direct patient surveys were not undertaken, patient satisfaction (see below) was inferred from GP responses.



#### GP virtual clinic survey in Tower Hamlets (28 responses from 35 practices)

Impact of the practice IT tools

#### Searches and Dashboards

All three intervention CCGs showed significant diagnostic coding improvement in the year following the intervention. The CCG which started with the highest coding increased from 76% to 90% of CKD cases coded, the CCG with lowest coding rates increased from 52% to 76%.





CCG	Coding change/quarter	P value	95% confidence intervals
Tower Hamlets	2.85%	P<0.001	1.73 to 3.96
City and Hackney	2.76%	P<0.001	1.96 to 3.55
Newham	5.03%	P<0.001	3.76 to 6.28

#### Regression for post intervention trend

#### Trigger tools

The trigger tool was run monthly in participating practices. The summary metrics indicate high rates of use. Almost half (44%) resulted in a reflective comment indicating altered clinical activity.

Population	200,000
Practices	35
Trigger tool alerts over 3 months in 2016	343
Alerts completed	91%
Action (review, retest, medication review)	44%
Referrals into e-clinic	15% (50 cases)

Summary metrics of trigger tools over a 3 month period in Tower Hamlets 2017

We collated completed trigger tools over a two year period for qualitative analysis. 1,921 reflections were stratified by patient age and by whether or not patients were referred. We used these categories to observe variations in clinical management.

The reflection data was supplemented with interviews. Eight semi-structured interviews with six GPs, one pharmacist and one practice manager helped us characterise practice use of the tool. This helped us compare what actions took place (based on the reflective comments) with GP perceptions of the tool (based on the interviews). A thematic analysis of the interview and reflective data was undertaken using a Framework approach which helped identify emergent themes in both data sources.

The analysis highlighted that well organised practices found the tool was readily embedded into workflow, and expressed greater motivation for using it. Reflection data highlighted cases of poorly controlled diabetes/hypertension for the 'yes-young' referrals, while many older referrals reflected gaining specialist support for a known plan. Generally, 'No' referrals emphasised implementing a management plan involving repeat tests and monitoring.

#### Selected quotes from the trigger tool interviews

#### Table 1. Selected quotes from the trigger tool interviews

Interviewee	Quote	Subtheme	Theme
69.4	they're not looking at eGFR as an isolated thing anymore, they're very much, when you look at your blood test results you're just looking at	eGFR	
021	So I think then I think that the key	trajectory	PATIENT SAFETY
	thing here is then if there is a		
	problem, there's a referral pathway,	Referral	
GP 3	so it's like any screening thing.	pathway	PATIENT SAFETY
	So certainly it has heightened the level of thinking about, actually we		
	should be a little bit more careful	Tool	
GP 3	about these patients.	usefulness	PATIENT SAFETY
	Absolutely. So, I think I'm a lot more confident in requesting things in	Confidence in CKD	
GP 4	terms of investigations now.	management	TT AS A LEARNING TOOL
	Yeah absolutely because I wasn't even aware there was an issue and then I went back and I think I	Changing	
GP 4	referred them to the clinic.	practice	PATIENT SAFETY

#### Table 2. Selected quotes from the free-text reflective comments on the trigger tools

Category	Quote	Subtheme	Theme
Yes referral - aged 60 & less	immediate repeat has been request but will referr for safety	Refer for safety	PATIENT SAFETY
No referral - aged 60 & less	Tool highlighted that we havent actioned appropriately - PN sent to clinician	Tool usefulness	PATIENT SAFETY
	Note sent to nurse practitioner to repeat this blood test as a result of trigger tool and review of bloods	Tool usefulness	PATIENT SAFETY
Yes referral - aged 80 & more	Very variable eGFR Have referred as not on ACEI and I am reluctant to start (but open to nephrology advice) due to hypotension and h/o falls (multifactorial)	Fluctuating eGFR	PATIENT SAFETY
	Still below baseline on repeat. Will refer virtual CKD clinic	eGFR decline	PATIENT SAFETY
No referral - aged 80 & less	Fluctuating eGFR on downward trajectory likely related to age and diabetes and diuretics being used for CCF. Currently in-patient.	Age appropriate decline	PATIENT SAFETY
	Previous readings 2 years ago similar to this recent reading. Plus change in assay. Have coded formally as CKD.	Coded	PATIENT SAFETY

#### Part 3: Cost Impact of the east London Community Kidney service

Service Commissioning

The service is commissioned by the participating CCGs in inner east London. Initially this included Tower Hamlets –the pilot site – then extended to City and Hackney and Newham, which are CCGs covered by CEG primary care data and facilitation services. During the course of the project we extended to Waltham Forest CCG where renal services are provided by Barts Health NHS trust and CEG is providing a limited package of primary care data services.

Initial pump priming for service development came from Tower Hamlets CCG through its involvement as part of the Vanguard scheme. Continuing funding for the service is based on:

a) Block contracts for renal services with participating CCGs. Hence all new/changed activity is contained within this financial envelope.

b) Continuing annual contracts between CEG and the participating CCGs, with the renal services embedded within these contracts.

#### Financial evaluation/costs of service delivery

A formal economic evaluation of the project has not been done.

Tower Hamlets CCG	2015-2016		6 2016-2017		2017-2018	
	N	£	N £		Ν	£
First Appointment	248	£80,007.28	183	£59,701.92	203	£61,056.31
Follow Up	1222	£188,224.66	1273	£197,620.52	1119	£156,066.93

#### Exemplar costs of General Nephrology First and follow up appointments in Tower Hamlets

Tariff for 2015-6	FA £322.61	FUp £154.03
Tariff for 2016-7	FA £326.24	FUp £155.24
Tariff for 2017-8	FA £300.77	FUp £139.47

#### Cost comparison with existing services

The cost of the service – when measured only by FA and FUp national tariff figures suggest that the service is cost effective from the perspective of the CCG.

However it is worth considering some of the additional costs and benefits from the perspective of the different actors in the service:

#### a) Hospital services

Absolute numbers of traditional face to face OPD general nephrology appointments may fall. However there has been growth in the demand for virtual appointments. There is also a considerable amount of "hidden work" in the virtual reviews which hospital clinicians are doing on the population referred into the renal clinic.

Clinic administration is more complex, and requires work across IT systems without an efficient interface.

#### Traditional PBR tariffs are not suited to innovative cross boundary services

b) Primary care services

The virtual referral service was taken up rapidly by practices.

However there were concerns in all CCGs about work shift – is unfunded additional work being shifted from secondary to primary care.

CCGs provided various financial incentives (in the form of enhanced services) to offset this. These included funding for targets on CKD coding, funding associated with referrals and the increased patient testing and review.

c) Patient perspectives (inferred from discussions with GPs)

Benefits to patients include speedy assessment, less time spent at hospital OPD services, less personally funded travel time, and less ambulance/hospital transport costs.

Virtual clinics are examples of 'eco-hospital' services, reducing carbon footprint

#### Part 4 Achieving Project Objectives

#### At the start of the project we set out to:

a) evaluate the innovative use of CKD population data. This included population searches for uncoded CKD, practice/CCG dashboards to show progress in coding, BP management and statins for CVD prevention. We also produced trigger tools to alert GPs to cases with falling eGFR.

b) provide data driven practice based facilitation, to support practices in improving CKD coding and management and use of IT tools.

c) produce a case study of the primary care characteristics of the 30% of patients with unplanned starts to dialysis to stimulate change over the care pathway.

The previous sections of this report set out in detail how we have met objectives a and b. For objective c) we have appended the abstract of a paper that is currently in process of submission to BMJ Open titled:

Predictors of late presentation to renal dialysis: a cohort study of linked primary and secondary care records in east London. Authors: Ademola Olaitan, Neil Ashman, Kate Homer, Sally Hull

#### **Enablers of success**

There are several factors we can identify which have contributed to the successful implementation of the project. These include:

#### i. The Clinical Effectiveness Group

#### https://www.qmul.ac.uk/blizard/ceg/

This primary care QI group, based in Queen Mary university, has worked with practices and commissioning organisations across east London for more than 20 years. Embedded in the local healthcare geography CEG has an excellent track record of QI delivery alongside a good menu of IT tools for practices. This meant that CCGs and practices were much more likely to sign up for the service, engage with the QI aspects of the programme and participate in aspects of the evaluation than if it was delivered by a commercial or relatively unknown organisation without a local track record. It was notable that engagement was less in Waltham Forest CCG where practices have less knowledge of CEG, where the facilitators are less known and where the CCG has less engagement with service planning than in the other localities.

ii. Key individuals within the renal department were able to facilitate change to build the hospital aspects of the service. This included engagement with Barts IT department to ensure that adoption of EMIS Web was part of trust-wide ICT strategy. Also important was engaging with members of the renal department to encourage change to established working practices and move to the delivery of a virtual consultation model. These are hard changes to make, particularly in an environment of heavy workload and staff changes. The success of this project illustrates the importance of investing in transformative change as a solution to financial pressures within the NHS.

iii. '*The tide of history*' was with us. More mundanely the NHS five year forward plan and the local sustainability and transformation partnership (STP) are keen to drive new models of OPD care with the aim of decreasing dependency on the traditional face to face model. The renal project exemplifies these aims, and is frequently cited as an exemplar new service.

#### **Problems in delivery**

Most of the problems related to the delivery and evaluation of the project were predictable, but often it was a struggle to find an effective mitigation strategy. Examples of this include:

#### a) Data driven facilitation

As part of our 'learning health system' we used data from the primary care dashboards to identify practices which had the lowest rates of CKD coding. These were offered facilitation by a renal specialist nurse. The difficulties we experienced were those of contacting practices, finding the right person to talk to, making an appointment with clinicians and enabling the clinical meetings to happen. These attempts at engagement took far longer than expected, and sometimes failed. These are often the least organised practices, often without a clinical lead for CVD/CKD. Some of these practices also had the most difficulty using the virtual referral system and trigger tools to best effect.

Practices most in need of facilitation were often most difficult to access

- b) Effective engagement with CCGs and local GP leads
- In Waltham Forest which has the least experience of working with CEG the virtual

renal service and practice dashboards were introduced with less introductory education, and no associated enhanced service financial targets.

Some GPs in this locality see the primary care aspects of the service as an imposition rather than a jointly negotiated QI project.

#### c) Pathology Laboratory

The Homerton pathology lab processes eGFR values with a range of formulae different to the national MDRD equation used at Barts. It chooses to add a Black ethnic correction when it has records from a patient admission. As a result the uniform calculations we used to create our 'falling eGFR trigger tool' work less well in City and Hackney. We are in process of reviewing how the tool is built to partly mitigate this problem. We are torn between having a universal tool which can be used everywhere and having to build tools specific to a locality.

#### Learning about implementation

#### We learned about:

The importance of local champions, in the hospital, in the CCG and in every practice to help drive the change and help identify the difficulties cannot be overstated. Communication, education and facilitation have to be repeated to keep a new system on the road.

## What does another locality need to know to implement a community kidney service locally.

a) Is there a vision for change? Do the CCGs and the hospital nephrologists want this?

b) Is there a will to flex the funding system – both for hospital PBR tariffs and CCG enhanced services?

c) Do you have one GP computer system across the patch? Working with multiple systems is possible, but more costly and provides less flexibility – as nephrologists are unlikely to learn more than one GP computer system.

d) How will you build the primary care searches, dashboards and trigger tools? Many
 CCGs don't have easy access to the data required for this, and the capacity to produce
 up to date comparative practice data. We consider that investment in CCG and practice
 IT, along with agreement on data sharing across practices to allow practice/network

comparisons, is one of the core foundations for future learning health systems – such as our renal service.

e) How will you evaluate the system, what is success for you?

#### Part 5: Sustainability and spread

#### Continuing beyond the Health Foundation funding period

Our intervention is likely to be sustained beyond the phase supported by the Health Foundation. It will probably develop differently in the four separate CCG/localities. However the primary care elements are underpinned by the work of CEG, and will continue and develop unless this unit (or the CKD service within it) is decommissioned. CEG, along with the GP practices, need to demonstrate the service value – for example using evidence of high levels of CKD coding, and improved BP management and statin prescribing. Understanding that effective management of CKD may also impact on other prevalent co-morbidities – such as heart failure – where recent evidence indicates that admissions for heart failure have strong associations with CKD, and hence are a target for improved preventive care and admission avoidance.

The hospital service element is commissioned by the CCGs, with the service details determined by clinicians. At present the east London CCG commissioners plan to continue the virtual clinics and the patient education workstream.

#### Effective continuation is dependent on

a) Leadership within the Renal department to continue developing the virtual service and demonstrating its value to commissioners, GPs, patients and nephrologists.b) Ensuring that a fair funding formula is developed which recognises the activity associated with virtual consultations.

#### External Interest and Recognition for the service Development

There has been considerable interest in the east London Kidney service, most coming from other CCGs and regions as well as the BMA and NHS England.

Neil Ashman and Sally Hull have spoken to many individuals and organisations as well as presenting at a range of events to stimulate discussion around developing similar services elsewhere:

#### **Summary of Oral Presentations**

Date	Event	Topic covered
Oct 2016	Tower Hamlets QI Seminar with Don Berwick	Working across the primary secondary divide in renal
Nov 2016	RCGP conference	Pilot kidney service
Jan 2017	New models of care Symposium at RCGP	Changing the OPD model
March 2017	City Health Conference (RCGP)	Virtual CKD service
April 2017	British Renal Society	Community kidney service
Sept 2017	Runner Up HSJ awards (acute sector)	Virtual CKD clinics
Oct 2017	North East London Clinical Senate at the Kings Fund	Community renal service
Jan 2018	BMA council	Virtual CKD service
June 2018	UK Kidney Week	A novel approach to CKD education in east London
June 2018	UK Kidney Week	Coding Improvement
July 2018	Society for Academic Primary Care	Coding Improvement

#### **Conference posters**



QMUL, William Harvey research poster 2018 "CKD coding improvement"



SAPC GP conference 2018, "Reducing unplanned starts to renal dialysis"

#### **Conference abstracts**



SAPC Abstract 2018 CKD Coding SH.docx

SAPC GP conference 2018 "QI intervention to improve CKD coding"



SAPC GP conference 2019 "Evaluating the use of trigger tools"

#### Awards and Media interest

In September 2017 the service was runner up in the Health Service Journal awards (acute sector)



April 2018 the service was featured in the Evening Standard review of the 'digital healthcare revolution'

### Patients to be given consultant's opinion in less than 24 hours

Evening Standard - West End Final Extra 4 Apr 2018 +2 more Ross Lydall Health Editor

PATIENTS are to be given access to hospital consultants within 24 hours under a "digital healthcare revolution" being pioneered in London.

Paper referral forms used by GPs to book appointments with consultants will be scrapped from October and replaced with online communications, enabling family doctors to receive nextday feedback from a consultant on a patient's condition to help decide on the next stage of treatment.

Under the NHS constitution, cancer patients must be seen within two weeks of up to 18 weeks for other conditions.

About one in 20 patients seen by a

Barts Health NHS Trust, which runs five east London hospitals, is in the vanguard of the system, which will be introduced London-wide. Barts Health runs a "virtual e-clinic" for patients with chronic kidney disease that has slashed waiting times for a specialist opinion from 15 weeks to five days, and ensures that only those who need to see a consultant are referred to hospital. The trust plans to roll out the system to eight other specialties, including diabetes, paediatrics, renal and dermatology.

....

Tom Butler, consultant haematoloof a GP referral, but there can be a wait gist at Barts Health, said: "It's allowed me to communicate safely and securely with GPs in real time, meaning we can

In May 2018 the community kidney service won the Barts Health/QMUL Innovation award



#### Spreading and scaling up the community kidney service

#### Local spread

The kidney service has already spread from the three inner east London CCGs (Tower Hamlets, Newham, City and Hackney) to Waltham Forest. This spread was linked to the contract which CEG now has with Waltham Forest and the delivery of renal services by Barts Health. Not all the practices in this locality use EMIS Web so the virtual clinic only has partial coverage. Barking, Redbridge and Havering CCGs are developing contracts with CEG. In time we plan to roll out the kidney service to these areas, but there are barriers to be managed:

- a) the variety of GP systems in these localities
- b) engaging the nephrologists in the referral hospitals.

Other specialist departments within Barts Health have expressed interest in the service, and we have worked with them to support their objectives.

#### National spread

We have responded to numerous enquiries about how to set up a similar service. Most details of the service are available on the CEG website, and we meet and discuss with other organisations when invited.

We consider that the concept is replicable – both to other areas and to other clinical services which rely heavily on test results for management decisions e.g. haematology. The exact form of virtual clinics supported by a primary care learning system are best

developed locally, taking account of the health service geography and context. Whilst few CCGs can replicate the dashboards which CEG employs in east London, there are many smaller clusters/networks of practices which can share data and develop services with their local hospital.

#### Remaining milestones

We plan to publish our evaluation of the service as follows:

1. Improving coding and primary care management for people with Chronic Kidney Disease: an observational controlled study in east London. (submitted) Authors: S.A. Hull<sup>1</sup>, V. Rajabzadeh<sup>1</sup>, N. Thomas<sup>3</sup>, S. Hoong<sup>2</sup>, G. Dreyer<sup>2</sup>, H. Rainey<sup>2</sup>, N. Ashman<sup>2</sup>

Predictors of late presentation to renal dialysis: a cohort study of linked primary and secondary care records in east London. (submitted)
 Authors: Ademola Olaitan<sup>1</sup>, Neil Ashman<sup>1</sup>, Kate Homer<sup>2</sup>, Sally Hull<sup>2</sup>

3. "Make the right thing easy to do:" (in draft)
Using the electronic health record to build safety alerts for chronic kidney disease
Authors: N. Thomas, V. Rajabzadeh<sup>1</sup>, S.A.Hull

4. Developing a community renal service for east London (in draft) Authors: S.A. Hull<sup>1</sup>, V. Rajabzadeh<sup>1</sup>, N. Thomas<sup>3</sup>, S. Hoong<sup>2</sup>, G. Dreyer<sup>2</sup>, H. Rainey<sup>2</sup>, N. Ashman<sup>2</sup>

#### **Appendix 1: Resources and appendices**

#### Practice CKD coding improvement, Newham CCG 2016-18.

The left hand figure shows a funnel plot of practice variation in coding (each dot representing a practice) at the start of the project. The tracer plot (on the right) demonstrates the shift in coding achievement for all practices, with the tracers outlining the improvement journey for the lowest performing practices.



#### Word Cloud of Trigger tool reflection data.

The word cloud is a visual reprenstation of the reflection data used as part of evaluating the CKD trigger tools. The importance of each word is shown with increasing font size.



#### The East London Community Kidney Service newsletters.

The three newsletters distributed to practices and CCG commissioners during the evaluation period, providing feedback to practices, CCGs and the renal department on CKD coding performance by CCG.

