Author’s response to reviews

Title: Do virtual renal clinics improve access to kidney care? A preliminary impact evaluation of a virtual clinic in east London

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Author’s response to reviews:

To the Editor, BMC Nephrology

Thank you for the opportunity to review this report in response to the reviewer’s comments. We have made a number of changes to the manuscript, which are detailed below. In the revised manuscript the changes we have made in response to the comments from reviewers are underlined.

We hope that you will now be able to accept this report for publication.

Detailed responses to reviewer comments
Editor Comments:

This is an interesting manuscript in an interesting area. However, given the number of revisions requested, acceptance is contingent on the ability to respond meaningfully to the suggestions

Manisha Jhamb (Reviewer 1):

Some suggestions for improving the manuscript:

1. Can the authors provide some more clarification on how the virtual consults align with the GP workflow? Are the patients identified by the GP and the referral solicited by the GP? Or the nephrologist uses the "package of IT tools" to identify these patients who may not be coded as CKD by the PCP and then provides virtual consult?

We do state in the introduction (line 98) that the virtual clinic includes all general nephrology referrals made by GPs. We also mention this in the methods section under ‘Description of the east London community kidney service’ at line 138.

We have strengthened this statement to ensure readers understand that all regular general nephrology referrals pass through the virtual clinic.

2. The Qualitative approach needs more details - how were the participants recruited, what were their relevant characteristics, which CCG did they belong to, how were the interviews conducted - individual or group, what was the qualitative analysis approach?

This section has been expanded (in the methods section L194-199) to describe how participants were selected (snowball technique for GPs, we interviewed all nephrologists involved in the service) the interviews were individual, each was transcribed and a thematic analysis was undertaken using the Framework approach.

3. 21,560 adults out of 1.2 million were found to have biochemical ckd - the prevalence seems low. How does this compare with the national prevalence? What was the definition of ckd used? Is this only based on outpatient labs?
The UK Renal Registry model estimates 6.1% of the population (aged 16 years and over) have diagnosed and undiagnosed stage 3 – 5 CKD nationally. (https://www.renalreg.org/wp-content/uploads/2014/10/CKD-prevalence-final.pdf). In this model Tower Hamlets (2.9%), City & Hackney (3.1%) and Newham (3.4%) CCGs have amongst the lowest expected prevalence in the UK.

The recorded CKD prevalence for London in the quality and outcomes (QOF) database is 1.9% (for 2018). In our study we had 21,560 adults with biochemical evidence of CKD among a total population of 1.2million. This equates to a prevalence of 1.79%. Our figures, and those from QOF are based on the entire population including children. East London has a younger than average population which will also contribute to a lower than expected prevalence figure.

4. Table 1 - BP - was this 1 time or average of several readings?

The dashboard in Table 1 shows the latest available quarterly data from each participating clinical commissioning group. The BP value is the latest available (single) value in the GP record.

5. How does the average annual referral rate compare to years prior to the program implementation?

In the twelve months prior to April 2015 the average annual referral rate to general nephrology outpatient clinics was 0.8/1,000 GP registered population in the three study CCGs in east London. We have added this to the text (line 225)

6. The increase in referrals is very impressive - what were the most common reasons? What was the distribution across the ckd stages?

The majority of referrals were for stages 3 – 5 CKD, and the near four-fold increase in referral surprised the authors as well. This may represent a benefit in making CKD referrals straightforward in the primary care record, and rapid in response. Further work will be needed to compare the characteristics of those referred under the prior system to current practice.
7. The surveys were only from 1 CCG - I wonder if the responses would have been different from other CCGs, especially from the one that was hard to engage

As part of the evaluation we were keen to do a survey at the introduction of the new service in the first CCG (made up of 35 GP practices) to capture the views of practitioners before this became “a routine service”. This explains why it is based in a single CCG. It is possible that surveys later in the course of the service development would have produced different responses.

8. The authors mention that the 4th CCG was slow to engage - what were some of the challenges and how were they overcome? What lessons learnt from this might be useful for others who may want to implement such a system.

There was less experience of data sharing and system wide quality improvement work in the Fourth CCG. Three CCG’s had 15 years of working with the Clinical Effectiveness Group, and hence were accustomed to working with practice facilitators, dashboards and quality improvement. We believe that over time the benefits of this approach will become apparent in the fourth CCG as well.

9. On a similar note, can the authors expand on how this was a learning health system - what lessons were learnt, and how did those inform practice?

An example of how patient data was used for system development and improvement, is the use of the referral control chart. High (and low) referring practices can be identified and outreach facilitation visits targeted. We have added this to the text in the Implications for Practice and future research section.

10. Fig 4 - patients satisfied is misleading as patients were not directly surveyed. Authors should reframe this to reflect that these are GPs perceptions of patient satisfaction

Thank you for pointing this out.

We have changed the heading for this to reflect that these comments are perceptions of patient satisfaction by the referring GP. This is also referred to in the results section L 265-7
11. The manuscript can be strengthened by addition of data on clinical outcomes - do the authors have any data on follow up of BP, statins, etc. after the virtual consult?

We do not have data on the individual changes made to patient management after the virtual clinic appointments.

However the changes in population metrics over the first 2 years of the service were the subject of an associated publication (ref 23)


Khaled Abdel-Kader (Reviewer 2):

Abstract:

1) In the abstract, can 95% CI be provided for the decrease in wait times

The average waiting time pre and post intervention were taken from the care records system at Barts Health NHS Trust. They provide aggregated data so we are unable to calculate confidence intervals.

3) What are CCGs for the non-UK audience?

CCGs are NHS organisations which provide planning and purchasing services for their local population. In this study the CCGs mentioned are all geographically co-terminous with their London boroughs.
4) The paragraph starting with "a number of UK studies describe a variety of virtual renal clinics which include..." and ends with "Other approaches..." should be moved to the discussion. This includes a brief description of previous studies which sets the context for the description of our study in the methods section, and we believe is best placed in the background section.

5) For the methods, NHS trust between 2015-2018: what months

The project started in 2015 with the first referrals into the virtual clinic in January 2016. (line 171) Evaluation ceased in April 2018. We have altered the manuscript to include this.

6) Did the Waltham CCG have 36 more GP practices? Please specify. Also, please provide additional info about these GP practices, what types of chronic disease management programs were in place? How many patients per provider? Any ongoing education regarding nephrology consultations or CKD care?

Yes, there were 36 practices in Waltham Forest which joined the service in late 2017. We have added this to the text. (Line 122)

All 166 practices provide NHS primary care services. There are a range of chronic disease management programmes, additional to those offered by core NHS services, across east London, but none of them specifically address chronic kidney disease. Clearly there is variation in service delivery and organisation between GP providers, but we do not think this substantially affects our evaluation.

7) What is EMIS web platform (describe in the manuscript given its importance)

An explanation that all practices in the project use EMIS Web system for the electronic health record has been added at Line 122/3

8) What is meant by "a weekly locality facing..." hospital clinic
Each locality (or CCG) had a separate virtual clinic run by separate groups of nephrologists. This was to foster relationship building between the nephrologists and the population of GP practices making referrals to them. The clinics were on one day each week. We have altered the text to clarify this. (Line 139)

9) Is it typical that new pt appts for nephrology consultation take only 20min? Does charting usually occur during or outside this time period? When comparing times for virtual vs. face to face, please try to ensure the comparisons are similar in this fashion (all charting, etc. completed).

This section has been rewritten in response to your query.

Audit has confirmed that virtual review of cases in the primary care record by a nephrologist takes 20 minutes. This compares to a first attendance out-patient template time slot at Barts Health and other Renal Units of 30 minutes per new patient for a general face-to-face first CKD consultation (excluding administration time).

10) Is EMIS the usual outpt EHR or did checking EMIS for consult results require providers to exit their usual workflow? Please clarify

Yes, EMIS Web is the system used for the electronic health record by all practices in east London. Checking EMIS for nephrology consultations does not require exiting from workflow. We have reviewed the text to clarify this.

11) How was buy in from GPs and nephrology providers gained given the uncertainty at the outset of the project?

Experience from a previous and successful joint hospital/primary care project in diabetes care gave GP’s confidence to extend innovation into kidney care. Regular visits to GP practices by nephrologists at the project outset to introduce themselves and explain the potential system benefits in person provided reassurance in advance of go-live.
At the start the virtual clinic service was funded as a block contract based on the previous years’ general nephrology activity. This is described in the methods section under Description of the east London community kidney service

12) Was the contract for GPs and nephrology providers amended for year on year growth? If I’m understanding correctly, there was a financial incentive for GPs to consult more frequently so that a proportion of these consults would turn into face to face consults and there didn’t seem to be a financial downside to them

Reviewer 2 is in part correct. We propose adding: ‘The NHS Long Term Plan increasingly commissions for whole pathway care rather than itemised episodes of care. The per CCG contract for the virtual system was priced at an annually reviewable, fixed tariff for all annual activity, including education, developing and delivering dashboards, and practice facilitation’.

GP’s were incentivised to record and respond to dashboards and trigger tools, but not to refer per se.

13) Please use fewer abbreviations, OPD, CCG, CEG... please limit to abbreviations that are more common

Apologies for all the abbreviations. All have explanations at the time of their first use, and are in the glossary at the end of the report.

14) Please provide an example for "In addition, each CCG developed customized local enhanced..."

Examples are cited in the text (line 166) but we have rewritten this to make it clearer that each CCG gave some financial incentives for practices meeting targets for coding, or BP management.

15) For "2) A package of IT tools..." additional details are needed for most of the described components of this paragraph (e.g., what kind of alert, alerted where, etc.)
The focus of this paper is the virtual CKD clinic. Further details of the trigger tools developed during this project are in reference 19.


16) For "3) renal education" details are again needed re: how interactive were discussions, how frequent for GPs, usual timing (lunch and duration), focus of the education, how frequently were patients seen, adherence to the sessions by PCPs and patients (were they well attended or infrequently adhered to, etc.)

We did not have the space to provide full details of the educational outreach sessions across all the four CCGs. The points about patient education are the subject of a further publication ref 20.


17) Interviews with 7 GPs and 3 nephrologists and one CEG facilitator... out of how many that were asked? The data sources for evaluation of the virtual CKD clinic section needs to be more developed and organized.

(See response to Query 2 from reviewer 1)

18) The prevalence of CKD stages 3-5 seems low, any insight as to why? Younger population?

(See response to Query 3 from reviewer 1)

19) In table 1, it would be useful to provide locations for the CCG and any short description of the differences based on geography between the 4 could be placed as a footnote.
We state that the four east London CCGs are contiguous (line 209) and describe them all as being co-terminous with their London boroughs in the methods (line 120)

22) Insight on why the 4 practices with 9K patients made no referrals? Was outreach attempted to discuss with them?

As part of using this data as a learning health system, we are now able to identify the high and low referring practices and focus outreach education and facilitation visits on these teams. We have now included this point in the discussion section.

23) What was the absolute # of face to face visits pre vs. post the virtual renal clinic

(See response to Query 5 from reviewer 1)

24) Which CCG is Tower Hamlets in?

The whole of the London Borough of Tower Hamlets with 35 GP within its geographical boundaries comprises the CCG of Tower Hamlets.

We have clarified this in the heading to Figure 4

25) Discussion: given the lack of quantitative comparisons, the points should be toned down. Similarly, the lack of many important process of care outcomes, information on long term sustainability, lack of time series analysis or even a pre-post comparison based on data presented here should be acknowledged as limitations. Also, this was implemented in nephrology alone. The results may differ if multiple other virtual clinics are in place. Also, was CCG level variation adjusted for pt level differences, provider level differences? Also, was there info on how workflow was impacted when recommendations were sent presumably after a recent visit but sometime before a future visit??
We have demonstrated the feasibility of the virtual service, and illustrate the rapid take up within primary care, the reduction in wait times, and improvements to access by virtue of decreasing the need to attend the outpatient department.

In agreement with the reviewer’s important points on the discussion we do call for further work to ensure that the outcomes for patients are commensurate with traditional services. We acknowledge that we will need longer term experience to truly understand the impact of the change, over time and against prior practice. The system is confined to CKD care alone, and may not be applicable to other chronic diseases.