An Evaluation of the Virtual Ward Medicines Management Service

EXECUTIVE SUMMARY

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Louise Cope
Andrew Kirkcaldy
Professor Barbara Jack

EXECUTIVE SUMMARY

This is the report of an independent evaluation of the impact of the NHS South Sefton Clinical Commissioning Group (CCG) Virtual Ward Medicines Management Service, and was commissioned by NHS South Sefton CCG, and carried out by the Evidence-based Practice Research Centre at Edge Hill University.

Background

A Virtual Ward is defined as a model of care that:

\[ \ldots \text{provides multidisciplinary case management services to people who have been identified, using a predictive model, as high risks for future emergency hospitalisation. Virtual wards use the systems, staffing, and daily routine of a hospital ward to deliver preventive care to patients in their own homes} \ (\text{Lewis, 2010 pg.1}). \]

Virtual Wards (VWs) have been in place since 2006 (Lewis, Wright and Vaithianathan, 2012) and have now been adopted across the United Kingdom and internationally. NHS South Sefton CCG has recently developed a hospital avoidance intervention in the form of a VW, and novel to this particular VW is input from a dedicated medicines management team. The team delivers medicines management support where identified as needed, to selected virtual ward patients.

Aims and Objectives

The overall aim of the study was to evaluate the impact of the VW Medicines Management Service, and the objectives were: To explore the views and experiences of the VW Medicines Management Team (MMT) on the service they deliver; To explore the views and experiences of the wider Multi-Disciplinary Team (MDT) of healthcare professionals who are also part of the VW, on the service.
provided by the Medicines Management Team; and to explore the views and experiences of the users (both patients and family carers) of the Medicines Management Service within the VW, and the impact of the service on these users.

**Study Design**

**Approval**
Approval to undertake the study was obtained from Edge Hill University’s, Faculty of Health and Social Care Research Ethics Committee and the Research and Development Committees of Southport and Ormskirk Hospitals NHS Trust, NHS South Sefton Clinical Commissioning Group and Liverpool Community Health NHS Trust. Standard processes for confidentiality, data storage and recruitment were followed.

**Methodology**
To explore the impact of the VW Medicines Management Service, a mixed methods approach was adopted via the use of focus group interviews (Appendices 1 and 2) and questionnaires (Appendices 3 and 4). In order to obtain a range of experiences, we explored the views and experiences of the patients and family carers via the use of the questionnaires, and those of the MMT and other MDT members via the use of the focus group interviews.

**Sample**
Postal questionnaires were distributed to users (both patients and family carers) and focus group interviews were carried out with the MMT and MDT members of the VW who consented to take part.
A purposive sampling approach was employed for the survey (Polit & Beck 2009), with specific inclusion criteria that users must be aged over 18 years of age and have experienced the Virtual Ward Medicines Management Service on at least one occasion.

**Data collection and analysis**

Qualitative, digitally recorded focus group interviews were undertaken and data analysed using a standard qualitative thematic approach. Data pertaining to the closed response items of each questionnaire were inputted into the statistical package SPSS (IBM SPSS Statistics for Windows; Version 20.0. Armonk, NY: IBM Corp.) and subsequently analysed using basic descriptive statistics such as frequencies and percentages. Open text comments were analysed thematically (Braun & Clarke, 2006).

**Results**

Participants for the first focus group (FG1) included five members of the MMT (pharmacists and pharmacy technicians). The second focus group (FG2) was held with nine members of the MDT (excluding medicines management staff, but including a health trainer, physiotherapist, social worker, occupational therapist, community matrons and district nurses). Questionnaires were received from nine patients (response rate = 35%), and eight family carers (response rate=50%). All of the patients who took part in the evaluation were aged over 65 years of age, and almost 90% of these patients lived alone. The GP surgeries to which the patients were registered covered a range of areas within the geographical footprint of NHS South Sefton CCG; and demonstrated a range of Multiple Deprivation Rank Indices (DCLG, 2015).
Key Findings

After analysis of the data obtained from the questionnaires, 90% of patients (P), and 75% of family carers (FC) indicated that they knew why the MMT had been asked to visit the patient:

To make sure I'm taking my medication regularly and also that I know what they're for. (P1)

To make it easier for me to give X her tablets so that I don’t forget to give her all her meds. (FC6)

Following the visit to the patient by the MMT, both patients and carers ranked the interventions carried out by the MMT in a similar order i.e. (highest to lowest): ‘Checked how medicines were taken’; ‘removed waste medicines’; ‘explained how medicines worked’; ‘checked how used inhalers and/or eye drops’; ‘provided them with aids to help with their medicines’, and lastly, arranged for other services to come and visit them.

Results indicated that patients felt that their knowledge and confidence about their medicines had increased after being visited by the MMT:

[the service] fills me with confidence and I am so sure I am taking the right medicine. (P2)
With 88% scoring their overall opinion of the medicines management service as good or excellent.

*I think this service is very good because we don’t get this time with a doctor.* (P3)

Seventy five percent of the family carers reported that there had been changes since the pharmacy team had visited the patient, with one carer explaining how she now had:

*Peace of mind.* (FC2)

Finally, 93% of the family carers responded that they believed the medicines management service to be good or excellent:

*Excellent service . . . and some good problem solving for someone who is registered blind. It gave control over their medicines back to them! Thank you.* (FC8)

Three key themes were identified from analysis of data from the focus groups: *Impact on Patients and Carers, Team Working within the Virtual Ward, and Issues and Challenges.* Several sub-themes then emerged to underpin these.

The first theme, *Impact on Patients and Carers,* was supported by the sub-themes: *Improved Communication; Providing Medication Management Aids and Increased Medicines Adherence; Patient Education; Medicines Optimisation and the Value of Domiciliary Visits.* The MMT participants (FG1P) believed that they improved
communication between the patients’ different care providers regarding the patients’ medication.

. . . they [the patient] had been supplied with it [warfarin] by the hospital, but at that point the GP wasn’t aware that the patient was actually taking warfarin, because the GP had actually stopped it for . . . he had stopped it because I think she was just non-compliant with her meds. But the hospital, not aware of the compliance issue, had re-initiated it. (FG1P1)

The MMT also frequently provided medication management aids (now referred to as aids), to assist patients to take their medicines correctly; so encouraging adherence:

We often provide medication aids that aid daily living, such as giving the patient reminder alarm clocks . . . and also we encourage patients with patient information leaflets . . . and initiation of blister packs for patients. (FG1P4)

Often the provision of aids was more helpful to the patient’s carers than to the patient themselves:

. . . If someone’s on a lot of medication, it is challenging for the carers, and a blister pack can often help, though… something like that can make a huge difference of time, just in the convenience for a carer. (FG1P5)

The MMT explained how they believed that part of their role was to educate patients about their medicines, again helping to increase patients’ adherence to their medication:

. . . when we go to people’s houses, they say they don’t really know why they’re taking their medication, and so we will often provide them with an information sheet explaining what the medication is, how often they take it, and what it’s used for, and
try and stress the importance of taking your regular medication and the reasons behind that. (FG1P4)

The MDT participants (FG2P) accredited the MMT with carrying out medicines optimisation for a large number of the patients on the VW:

. . . and it’s just a fantastic review of the patient isn’t it, that they get and they [MMT] highlight issues, maybe he [the patient] needs to go back to the GP with things, and some people who you know, obviously as you get older it’s all polypharmacy. Sometimes they [MMT] can reduce things, or you know, different medication that does the same job with one tablet, or they can put all the tablets together once a day to cut down all the issues with taking them. (FG2P3)

The MMT reported on the benefits they have found of domiciliary visits. These have included being able to see first-hand, environmental, social and family issues that might affect a patient’s adherence to their medicines. Often then leading to the MMT signposting the patient to other health and social care professionals:

No, they’re [patients] just struggling and, you know, pride and dignity comes into it, and - we saw a gentleman the other day, didn’t we, and - very sad because, you know, he didn’t want to admit that he was struggling. He was quite tearful, and obviously needs a lot more support than just sorting out the medicines, so at least then we can highlight that to - whether it’s the matron or Health and Wellbeing, you know, ‘cause sometimes it’s just organising a Befriender going in. So I feel we add a lot there because you do get a clearer picture of the situation. (FG1P2)

The second key theme: Team Working within the Virtual Ward included the sub-themes: Support and Guidance and Inter-Professional Education. Both the MMT and the MDT spoke of the many advantages of working together as one team within the VW, and the benefits this brought to the patients, and to each other:
I think the MDTs are vital because you can go along, as [Participant 5] said, you can have all this information and yet you can go and sit in an MDT meeting, and one of those other disciplines will throw something into the mix, and that fits the puzzle; so you have a much clearer picture. (FG1P2)

The MMT were seen to be proactive in sharing their expert knowledge of medicines management with the MDT; and were recognised by the MDT as often educating them on this subject:

And yeah it has been beneficial . . . some of the meds management team have done like a training session and brought some of the aids, you know, some of the assistive aids you can get, and brought them for us to have a look at. So that’s been really useful. (FG2P3)

The final key theme was: Issues and Challenges. Within this theme the MMT reported on a wide range of issues and challenges they had experienced whilst delivering a medicines management service within the VW. These included: Expectations of Patients; Access to Patient Records, Time and Nature of the Medication Reviews; Lone Working, Clinical Supervision; Follow-Up Service and Dementia and Mental Health. These are further discussed in more detail within the main report and are reflected in the recommendations made below.

Limitations
Several limitations have had to be taken into account in the interpretation of the results of this evaluative study. These include the lack of an observational element i.e. records of the actual interventions made for each individual by the MMT service,
and the lack of a comparator to patients who did not receive the service. In addition, the sample for the study was predominantly an elderly population, frequently with memory and mental health issues. Due to the low numbers and disparity of models of VWs across the country, in particular regarding the composition of the MDTs within those VWs, it is unclear how transferable these findings will be. This pilot study has no economic evaluation. Further research, including a detailed economic evaluation, along with a longitudinal study to observe long term benefits for the patients is therefore recommended.

**Recommendations**

1) Consideration is given to adopting a model of formal clinical supervision for the MMT.

2) Training to support the MMT in providing services to patients with memory loss and mental health issues.

3) To explore the current Lone Worker Policy in view of the VW client group.

4) The production of an information leaflet aimed at carers and users of the VW, explaining the role of the MDT within the VW.

5) Exploration of the options of offering a follow up appointment service by the MMT.

6) Exploration of the Information Technology Infrastructure between the different organisations that interface within the VW, with a view to enabling the MMT to access patient records remotely.

**Conclusion**

By adopting a prospective design this evaluation has captured a real time service experience. Although being mindful of the limitations, there appear to be a number of conclusions that may be drawn from the study. Clearly the MMT within the VW is
valued by patients, carers and members of the MDT alike. The findings indicating that the contribution of the MMT to the VW is a positive experience for both the wider VW MDT, and the users of the medicines management service within the VW. The MMT is clearly, working in line with national recommendations and guidelines around several aspects of medicines management (NHSBSA, 2015; NICE, 2007, 2009, 2015; RPS, 2011, 2013) and are increasing the quality of patient care overall.
References


Appendix 1: Focus Group schedule (MMT)

An Evaluation of the Virtual Ward

Medicines Management Service (VWMMS)

MMT Focus Group

i. Welcome and thank you for participating.

ii. Introduction of researchers/facilitator

iii. Purpose of the session:

- To explore the views and experiences of the Medicines Management Team (MMT) on the service provided by them within the Virtual Ward (VW) environment. This information will inform an evaluation of the impact of the Virtual Ward Medicines Management Service.
- We are planning that this session will last about 30 minutes. If you need to leave the room briefly during the session please feel free to do so.
- Have you all read and understood the participant information sheet? Have you any questions?
- Have you all signed a Consent Form?

Ground Rules:

- Could you all please ensure that you mobile phones are on silent or switched off.
- Have any of you NOT taken part in a focus group before?
- Please speak up – one person at a time, but if you want to chip-in to what somebody else is saying please alert me.
- We will be on a first-name basis for the discussion
- Be honest – your individual comments will remain confidential as the data transcript from the focus group will have names and identifiers removed to ensure anonymity and confidentiality. Your anonymised comments but may be included in the final evaluation report.
- I would also ask that confidentiality is assured from your individual perspectives by asking you to respect the confidentiality of others when outside the group.
- If referring to patients within the conversation please avoid using patient names. If you do however use a patient’s name then this will be removed when the focus group recording is transcribed.
- Please be respectful – no personal attacks; if you disagree, please tell us but in a calm and respectful manner.
- Stay on the subject.
- Please participate.
- We will be audio-recording the session in order to aid recall when writing the evaluation report. As I explained previously, confidentiality will be maintained throughout the interview unless you disclose some unsafe, unethical or illegal practice that has not been previously reported through the appropriate channels.
these cases the focus group interview will be stopped, the matter discussed with you to make it clear what is happening, and the relevant NHS South Sefton Clinical Commissioning Group / Liverpool Community Health Trust and Edge Hill Safeguarding Policies will be applied.

- It is not expected however that this is likely to occur during this focus group as patient safety issues are not the subject being discussed here.
- If any of you would like to see a summary of the transcribed focus group at the end of the study then please leave me your details later or e-mail me (my contact details are on the participant information sheet).

Introductions: Please tell us your name, role, how long have you worked within the Virtual Ward MMT.

Discussion Questions:

- Please understand that there are no right/wrong answers, but rather differing opinions, so please share your point of view even if different from what others have said.
- What do you think in general about the VWMMS?
- How do you feel about the change in your role from that working within the VW team and that of your normal MM function? What are the positives and negatives of these?
- Thinking back to the service(s) you have recently delivered the, what impact/ difference, if any, do you think that this has made to the patient(s)? Can you give a clinical example of an intervention carried out by the MMT which has prevented or may have prevented an admission to hospital?
- What do you feel about the supervisory role? How is this working?
- Thinking back to the service(s) you have recently delivered, what impact/ difference, if any, do you feel that this has made to the family carer(s)?
- Thinking back to the service(s) you have recently delivered by the MMT. What went well? What went less well?
- Regarding the MMS, what would you change if you could? (Prompts: Referral process? How do feel about how decisions are made? How you interact with one another? Interaction with other members of the VM? Communication? Outcomes? )
- Are there any other services that you think that the MMT could/should offer to the VW patients?
- Do you feel that you have any developmental needs?
- Is there anything I didn’t ask that you’d like to discuss about the VWMMS?

THANK YOU FOR YOUR TIME TODAY
Appendix 2: Focus Group schedule (MDT)

An Evaluation of the Virtual Ward

Medicines Management Service (VWMMS)

MDT Focus Group

i. Welcome and thank you for participating.

ii. Introduction of researchers/facilitator

iii. Purpose of the session:

- To explore the views and experiences of the wider Multi-Disciplinary Team (MDT) of healthcare professionals who are also part of the virtual ward, on the service provided by the Medicines Management Team. This information will inform an evaluation of the impact of the Virtual Ward Medicines Management Service.

- We are planning that this session will last about one hour and will have a 5-10 minute comfort break half way through. If you need to leave the room briefly during the session please feel free do so.

- Have you all read and understood the participant information sheet? Have you any questions?

- Have you all signed a Consent Form?

Ground Rules:

- Could you all please ensure that you mobile phones are on silent or switched off?

- Please speak up – one person at a time

- We will be on a first-name basis for the discussion

- Be honest: your individual comments will remain confidential as the data transcript from the focus group will have names and identifiers removed to ensure anonymity and confidentiality. Your anonymised comments but may be included in the final evaluation report. I would also ask that confidentiality is assured from your individual perspectives by asking you to respect the confidentiality of others when outside the group.

- Please be respectful - no personal attacks; if you disagree, please tell us but in a calm and respectful manner.

- Stay on the subject.

- Please participate.

- We will be audio recording the session in order to aid recall when writing the evaluation report. As I explained previously, confidentiality will be maintained throughout the interview unless you disclose some unsafe, unethical or illegal practice that has not been previously reported through the appropriate channels. In these cases the focus group interview will be stopped, the matter discussed with you to make it clear what is happening, and then the matter reported to the study supervisor Dr Barbara Jack.

- It is not expected however that this is likely to occur during this focus group as patient safety issues are not the subject being discussed here.
Introductions: Please tell us your name, role, how long have you worked within the Virtual Ward.

Discussion Questions:

- Please understand that there are no right/wrong answers, but rather differing opinions, so please share your point of view even if different from what others have said.
- What do you think in general about the VWMMS?
- How do you think that the relationships are between yourselves and the MMT?
- How have these developed?
- Do you think that there are any benefits to these new relationships?
- Have your expectations changed as a result of working alongside the MMT?
- Are you aware of all of the services that the MMT can offer to patients?
- What specific services provided by the MMT have you seen delivered in practice?
- Thinking back to the service(s) you have recently seen delivered by the MMT, what impact/difference, if any, do you think that this has made to the patient(s)?
- Thinking back to the service(s) you have recently seen delivered by the MMT, what impact/difference, if any, do you feel that this has made to the family carer(s)?
- Thinking back to the service(s) you have recently seen delivered by the MMT. What went well? What went less well?
- Regarding the MMS, what would you change if you could? (Prompts: Referral process? How do feel about how decisions are made? Interaction with the MMT? Communication? Outcomes?)
- Are there any other services that you think that the MMT could/should offer to the VW patients?
- Thinking back to the service(s) you have recently seen delivered by the MMT, has the MMS impacted on your role? If so, how?
- Is there anything I didn’t ask that you’d like to discuss about the VWMMS?

THANK YOU FOR YOUR TIME TODAY
Appendix 3: Patient Questionnaire

An Evaluation of the Virtual Ward Medicines Management Service
Patient Questionnaire

To answer the following questions, please tick the boxes:

1. How old are you?
   18-65 years □  66-85 years □  over 85 years □

2. Are you:
   Male □  Female □  Trans □  Non-binary prefer not to say □

3. Do you live alone?  Yes □  No □

4. Which GP surgery do you belong to?

5. Do you know why the pharmacy team was asked to visit you?
   Yes □  No □  If yes, why?

6. Thinking back, what did the pharmacy team do for you?
   Please tick all that apply:
   Provided me with aids to help me with my medicines. E.g. pill box, tablet cutter, medicines chart □
   Checked how I use my inhalers and/or eye drops □
   Checked how I took my medicines □
   Arranged for my medicines to come in blister packs □
   Removed any medicines that were not being used □
   Explained how my medicines work and why I am taking them □
   Arranged for other services to come and visit me □
   Other, please state
7. Thinking back to before the pharmacy team visited you, how much did you understand about your medicines?

   None □   Very little □   Some □   Quite a bit □   Very much □

8. Thinking back to before the pharmacy team visited you, how did you feel about taking your medicines?

9. How much do you understand about your medicines now?

   None □   Very little □   Some □   Quite a bit □   Very much □

10. How do you feel now about taking your medicines?

11. If you needed to ask questions about your medicines in the future who would you ask first?

   Your GP □   A pharmacist □   Other □

   If other, who?

12. Overall, what do you think of the service provided by the pharmacy team (these are the people who visited you in your home and are not the ones who bring your tablets?)

   Poor □   Fair □   Average □   Good □   Excellent □

13. We are interested in anything else you would like to say about the medicines management service:

   This survey is now complete. Thank you for your time.

   If you have a concern about any aspect of this study, or you would like more information, you can contact Professor Barbara Jack at Edge Hill University (Tel: 01695 650768 / 01695 650941 Email: jackb@edgehill.ac.uk) or Louise Cope (Tel: 01695 657074 Email: copel@edgehill.ac.uk). If you wish to contact someone independent of the evaluation team please contact Professor Clare Austin (Tel: 01695 650772 Email: austincl@edgehill.ac.uk).
Appendix 4: Family Carer Questionnaire

An Evaluation of the Virtual Ward Medicines Management Service

Family Carer Questionnaire

To answer the following questions, please tick the boxes:

1. How old are you?
   18-65 years □  66-85 years □  Over 85 years □

2. Are you: Male □  Female □  Trans □  Non-binary prefer not to say □

3. What is your relationship to the person you care for?
   Wife/husband/partner □  Son/daughter □  Other family member □  Friend □

4. Which GP surgery do they belong to?

5. Do you know why the pharmacy team was asked to visit the person you care for?
   Yes □  No □  If yes, why?

6. Thinking back, what did the pharmacy team do for the person you care for?
   Please tick all that apply:
   
   Provided them with aids to help them with their medicines.
   E.g. pill box, tablet cutter, medicines chart □
   Checked how they use their inhalers and/or eye drops □
   Checked how they took their medicines □
   Arranged for their medicines to come in blister packs □
   Removed any medicines that were not being used □
   Explained how their medicines work and why they were taking them □
7. Has anything changed since the pharmacy team visited the person you care for?
Yes □ No □ If yes, what?

8. In the future, if you needed to ask questions about the medicines of the person you care for, who would you ask first?
Their GP □ A pharmacist □ Other □ If other, who?

9. Overall, what do you think of the service provided by the pharmacy team?
Poor □ Fair □ Average □ Good □ Excellent □

10. We are interested in anything else you would like to say about the medicines management service:

This survey is now complete. Thank you for your time.

If you have a concern about any aspect of this study, or you would like more information, you can contact Professor Barbara Jack at Edge Hill University (Tel: 01695 650768 / 01695 650941 Email: jackb@edgehill.ac.uk) or Louise Cope (Tel: 01695 657074 Email: copel@edgehill.ac.uk). If you wish to contact someone independent of the evaluation team please contact Professor Clare Austin (Tel: 01695 650772 Email: austincl@edgehill.ac.uk).
Appendix 5: Project Timeline

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<tr>
<th>STAGE OF STUDY</th>
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<tr>
<td>Memorandum of Agreement signed</td>
<td>January 2015</td>
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<tr>
<td>Drafting of data collection tools</td>
<td>January – March 2015</td>
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<tr>
<td>Approvals from R&amp;D</td>
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**Data collection extension requested by NHS South Sefton CCG in July/August**