Evaluation of the Hywel Dda Community Pharmacist pilot optimising medicines treatment in heart failure.

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Distribution:

- Rural Health Implementation Group
- Hywel Dda Local Health Board
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Purpose and Summary of Document:

As one of the Rural Health Innovation Fund projects, Hywel Dda Health Board has carried out a pilot of a rural community pharmacist held medicines optimisation clinic for patients with heart failure. The pilot took place at a pharmacist clinic held within a GP surgery in Pembroke between January and April 2011 and was designed to establish a community pharmacist specialist clinic as part of the integrated referral pathway for heart failure patients in rural areas.

This report is a retrospective evaluation of the pilot against its key aims and objectives, alongside the Rural Health plan themes of access, integration and community cohesion and engagement.

Contents

Background

Heart Failure (HF) is increasing and its incidence rises steeply with age. The prognosis is poor with 30-40% of patients diagnosed dying within one year. Guidance in HF from the National Institute of Health and Clinical Excellence (NICE, 2010) recommends that all patients are on maximum tolerated dose of the drug treatments ACE inhibitors (ACEI) and β-blockers. Optimisation of doses of these drug groups for patient's therapy is often vital as it can impact directly on patient outcomes. The 1000 Lives plus collaborative (2010) identified a number of key interventions that would lead to improved patient care including:

- Initialisation and optimisation of a β-blocker and
- Initialisation and optimisation of an ACE inhibitors.

In rural settings follow up care can be difficult and access to the hospital clinics can be a problem due to the distances involved. There is also a shortage of co-ordinated services in the community utilising specialist nurses to support patient's care.

As part of a successful rural pharmacy project proposal to the Rural Health Innovation fund, Hywel Dda Local Health Board (LHB) identified piloting a community pharmacist held clinic to optimise the medicines use in heart failure (HF) patients as part of the referral pathway. The pharmacist is an independent prescriber and was able to utilise these additional skills in reviewing doses of medicines and issuing prescriptions for patients as required. Patients were identified at discharge from hospital or from the local GP practice and follow up arranged.

The pilot considered the three key themes of the Rural Health plan: access to services, integration and community cohesion and engagement close to patients' own homes.

The community pharmacist clinic reviewing medicines in heart failure

As part of the Rural Health project, the main aim of this pilot was to improve access to a medicines review service closer to the patients' own home without them having to access the service at the main District General Hospital. The key objectives agreed at the start of the pilot were:

- To establish and integrate community pharmacist specialist clinics as part of integrated referral pathway for patients in rural areas
- To train and provide experiential learning for pharmacist working with heart failure nurse at local clinic sites to become part of referral team
- To improve patient care in HF, using available best practice e.g. NICE, NSF, 1000lives etc. and
- To optimise treatment of identified HF patients by titrating doses up to the maximum tolerated.

The community pharmacist medicines review clinic was held weekly within the local GP surgery to allow full access to patient information and medical history.

Definitions, terms and measures

This scheme was led by the community pharmacist and supported by a specialist nurse and cardiac services from secondary care, and the patients' own GP. Patients were referred to the pharmacist following discharge from hospital to review and optimise their medication treatment. Existing patients who were not on optimal doses were also identified from the GP practice list for further review. This aimed to increase patient understanding and improved compliance leading to them being less likely to be re admitted due to non compliance or non optimisation of doses of ACEI and β-blocker. Full details of any changes to medication and monitoring arrangements were shared with patient's own GP practice.

The community pharmacist completed two days training and experience with the cardiac care team at their clinics prior to the pilot. Communication protocol processes were then set up and patients were identified for referral to the pharmacist for review and optimisation of their medicines. The pilot lasted for 12 weeks and this paper forms the evaluation of the scheme against its stated objectives and the key themes of the Rural Health plan.

Using the GP practice's list of patients diagnosed with heart failure, patients were categorised by the pharmacist into different treatment groups for the purpose of this medicines optimisation project.

Group 1: Heart failure diagnosis and on an ACE inhibitor or an ARB

Group 2: Heart failure diagnosis and not on an ACE inhibitor

Group 3: Heart failure diagnosis and on an ACE inhibitor or ARB but not on a beta-blocker

Group 4: Heart failure diagnosis and on an ACE inhibitor or ARB and on a beta-blocker

The aim of the project was to review the patients identified from this screening process and look to optimise the treatment doses and/or initiate other medication.

Four key deliverable measures were agreed at the start of the pilot:

- Number of HF patients accessing pharmacist clinics.
- Numbers/percentage of HF patients requiring titrating to maximum tolerated doses of (a) ACEI (or ARB) and (b) Beta-blocker.
- Attendance rates (including non-attendees or referrals etc.)
- Patient questionnaires were given out to support qualitative analysis.

Evaluation

The main body of this evaluation focused on the quantitative elements of the pilot measured against the key objectives and deliverables agreed at the planning stage. It also considered some qualitative feedback from the patient questionnaires issued and returned as part of the project.

Aim.

To produce a retrospective evaluation of the community pharmacist clinic optimising medicines of pre-identified heart failure patients in Hywel Dda Local Health Board (LHB).

Objectives.

- To identify the number of patients accessing the heart failure clinic held by the community pharmacist to obtain a measure of participation.

- To review the number of patients requiring changes towards optimised medicines care from the pharmacist as part of integrated referral pathway.
- To analyse and describe pharmacy clients' medicines data as measure of improved patient care in HF utilising available best practice.
- To report the key results from the pharmacy questionnaire issued to patients attending the community pharmacist HF medicines clinic.

Methods

The evaluation used the data at the 12 week end point of the pilot and looked at the pharmacist data collected when changes had been recommended and/or initiated to patient care e.g. numbers of patients requiring titrating to maximum doses of drug therapy. It also looked at accessibility and support for the pharmacist clinics in reviewing feedback received from the patient questionnaires that were issued and returned to the practice.

Activity

Data were collected from the community pharmacist independent prescriber who held all the weekly clinics within the GP surgery. A summary of this data is shown in table 1:

Table 1. **Activity and medicine dose outcomes by patient group (January 1st – March 31st 2011)**

	No of patients on GP list with relevant diagnosis	No. of patients identified for review clinic	No. of patients requiring dose changes	No. of patients referred on for testing/GP	Patients reviewed with no changes	Patients who did not attend
Group 1	74	10	6	2	2	0
Group 2	14	4	2	0	0	2
Group 3	9	2	0	2	0	0
Group 4	41	10	3	3	0	4
Total	**138**	**26**	**11**	**7**	**2**	**6**

Full detailed summaries of all patients included within each group are included in Appendix 1.

Qualitative data was also obtained from the questionnaire that was designed and distributed by the pharmacist who held the clinic. 10 of the 15 questionnaires were returned with the following results:

- 5 felt the standard of care was better in the pharmacy clinic than that received previously and 5 felt it was the same.
- 9 of the10 felt they understood more about heart failure since attending the clinic
- 9 of the10 felt they were more involved in decisions about their treatment.
- 9 of the10 would attend the clinic if it was held in a consulting room in the pharmacy rather than the surgery.

Discussion

Using the GP practice list, 138 patients (0.6%) were identified with a diagnosis of heart failure and were categorised into the four different groups for the purpose of this project.

Of these 138 patients, 26 (19%) were identified as being suitable for referral to the community pharmacist clinic and were used as the baseline measure of participation in this pilot.

Reported disease prevalence information shows 0.9% of patients on practice list are included in heart failure registers (Welsh Government, 2010).) The numbers in this pilot indicate that a potential 0.1% of patients on a practice list could be on sub optimal doses for their HF e.g. for a practice list size of 10,000, which indicates there could be up to 10 patients that are on sub-optimal doses of the HF treatment.

Access

Given the timescales of the pilot, the numbers that accessed the rural pharmacist clinic were very good and have resulted in 26 patients accessing HF medicines care as part of an NHS heart failure clinic, which satisfies one of the key themes of the

Rural Health plan. Only 2 patients (8%) did not require any changes to their medication and 6 (23%) patients chose not to attend. For those clients that started their pharmacy clinic appointments there was excellent follow up rate with only 2 appointments missed out of 32 made. Access to the pharmacy clinic is key as patients may have had to travel long distances previously to attend similar clinics held at the hospital. The results from the questionnaire show that clients felt the pharmacist clinics provided them with at least the same level of care and the majority would attend such clinics if they were held within the community pharmacy rather than the surgery.

The pharmacist is an independent prescriber and is able to print/sign prescriptions for the patient so also removing the extra step for patients of seeing the GP for the prescription, thus saving both patient and GP time.

Integration

Of the 26 identified patients, 11 (42%) required dose changes to their medication to achieve optimal drug treatment for their heart failure and there were 7 (27%) referrals by the pharmacist onto colleagues in the hospital/GP surgery. This acceptance and joint two-way collaboration shows closer working and integration between cardiac care and pharmacists in rural areas, supporting the Rural Health plan principle of integration between different healthcare providers improving health and service delivery in rural communities. There is very good acceptability of the pharmacist as member of the cardiac team within the rural locality. Some patients have been identified as needing referral to GP or Cardiologist which may not have been done so had the clinic not been in existence.

Pharmacist initiated dose adjustments (as per best practice guidelines)

As part of the analysis of pharmacy clients' medicines data as measure of improved patient care, 6 of the 10 patients in HF Group 1 had their dose of ACE/ARB increased. For three of these patients taking ramipril, the average daily dose increase was from 4.16mg daily to 9.16mg daily (a 120% increase). For the two patients taking lisinopril, the average daily dose increase per patient was from 11.25mg daily to 18.75mg daily (a 67% increase). The sixth patient, who was

prescribed candesartan has increased their dose from 2mg to 8mg daily (a fourfold increase in dose)

Of these 6 patients in group 1 who had their dose of ACE/ARB adjusted, 3 are now at target dose, 1 is at 75% of target dose, 1 is at 25% of target dose and the final patient is at 50% target dose of ARB but importantly is now on an ARB that is licensed for heart failure.

3 of the 10 patients in Group 4 had their dose of β-blocker adjusted. Average daily dose per patient was increased from 2.92mg daily to 3.42mg daily (a 17% increase).

Community engagement.

The pharmacist intervention has facilitated dose increases of the appropriate drug treatment to the maximum tolerated levels. This role has been carried out by the pharmacist as a key part of the referral pathway within the rural community. The feedback from the questionnaire showed that 9 of the 10 patients felt their understanding of their treatment in heart failure was increased and also felt involved in the care that they had received.

Optimising drug treatment improves patient care in heart failure and this pilot has shown the added value of including a pharmacist specialist as part of the cardiac team. 42% of all the patients referred to the pharmacist required changes to their drug treatment, which is a measure of the importance and value within the community team.

The community pharmacist clinic, supported by the LHB to deliver this medicines service, has encouraged people in rural communities to engage locally and access different specialist services from their community pharmacist. Sharing of patients' relevant clinical information would also assist in taking this service forward, in the future, from a community pharmacy location.

Patient stories

In addition to the numerical supporting data for this pilot scheme, there has also been positive feedback received from clients involved in the pilot. The following are some of the comments from patients that have attended the pharmacist clinic.

"This cardiac clinic is an excellent service. In the past if any of my medication has been changed I end up in hospital. This hasn't happened since I have been seeing the pharmacist"

"This clinic has been a great help to me and has meant that I am now taking the doses of medication my consultant wants me to take. This didn't happen before the clinic"

"I used to know when my husband was in the room even if I couldn't see him because of his noisy chest. Since his medication has been changed in the clinic I can't hear him in the room and he feels much better"

"I feel much less tired since my medication has been increased"

"The side effects from my medication have now been reduced since attending the clinic and having my dose reduced. I was going to stop taking the medication completely as I didn't like the side effects, now I will keep taking the tablets"

Conclusion

There are numerous possible approaches to defining outcomes of health care or of a health services activity (Donaldson 2009, p224) and this pharmacy programme has delivered improvements in medicines-related care in HF by individuals within the rural communities of Hywel Dda who may have needed to travel to receive similar care before. This has been achieved as part of a robust referrals process between all the different healthcare services involved in the care of the patient.

The Hywel Dda LHB pilot community pharmacist clinic service is a good example of how community pharmacist can support services that focus on the health of people living in rural communities. It has demonstrated improvement in the pilot's key objectives and addressed the three key themes of the Rural Health Plan: access, integration and community cohesion and engagement.

The initial successes and data from the pharmacist pilot identified within this evaluation will contribute to the LHB making further considerations towards the longer term future of the service and will allow for further development of services away from the hospital base out into the community.

References

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Appendix 1.

Pharmacist summary detail of patients within each group.

Group 1

74 patients on list of whom 10 identified as being on sub-maximal doses. 10 patients invited to attend clinic. 5 patients have had their dose of ACE increased and 1 ARB increased.

Ramipril 5mg daily to Ramipril 10mg daily and remained on this dose with no adverse effects to date. Patient reports that symptoms of breathlessness have improved.

Ramipril 1.25mg bd increased in a stepwise approach to Ramipril 5mg bd with no adverse effects to date. Patient reports some improvement of symptoms *(This patient has been seen by the cardiologist who requested up-titration of doses of ramipril and bisoprolol but this was not followed up by the surgery in the timescale requested. Attendance at clinic has ensured this had been achieved before next consultant appointment)*

Ramipril increased from 2.5mg bd to 2.5mg in morning and 5mg at night. No adverse effects reported to date.

Lisinopril 20mg daily to Lisinopril 25mg daily and then to Lisinopril 30mg daily with no adverse effects and an improvement in breathlessness noticed.

Lisinopril 2.5mg daily increased to 5mg and then to 7.5mg daily with no adverse effects. This patient was nervous about increasing the dose of lisinopril due to two previous adverse events of hypotension. Following a detailed consultation and explanation of the benefits of increasing the dose and action to take if hypotension occurred the patient was willing to try the increased dose. The patient has successfully achieved the increase in dose with an improvement in symptom control.

1 patient changed from Irbesartan (unlicensed for HF) to Candesartan (licensed for HF) and has had one successful dose increase of Candesartan to date. Currently on Candesartan 8mg.

2 patients no change to current dose as already on maximal tolerated.

1 patient would rather see GP.

1 patient reviewed in clinic requiring U&Es before able to adjust dose of ACE. U&Es returned with CKD of Stage 4. Urgent referral to GP who stopped metformin, reviewing dose of Ramipril and referred patient to renal unit.

Group 2

14 patients on list of whom 4 identified and invited to attend clinic. 2 patients did not attend and the other 2 patients overlap into Group 4 and were seen and ACE inhibitors contra-indicated due to previous adverse reactions.

Group 3

9 patients on list of whom 2 were identified as potential candidates for initiation of β-blocker. 1 patient was admitted to hospital prior to sending clinic appointment letter and has since died and the other patient was seen but due to bradycardia in absence of β-blocker, it was not appropriate to initiate one at this time.

Group 4

41 patients on list of whom 10 identified as being on sub-maximal doses.

10 patients invited to attend clinic.

2 patients have had their dose of Bisoprolol increased and 1 patient had dose decreased.

Bisoprolol 2.5mg daily to 3.75mg daily to 5mg daily with no adverse effects.

Bisoprolol 1.25mg daily to 2.5mg daily. Remains on this dose with no adverse effects.

1 patient on Bisoprolol 2.5mg daily may require reduction in dose as bradycardic and short of breath. Patient was originally on 1.25mg daily and may have had dose increased inadvertently due to an input error. Referred to GP for further investigation now that this has been identified. In addition patient is taking Amiodarone, 6 monthly monitoring not done so requested these in clinic which have been returned with raised TSH so also referred to GP for further review. Patient has now been reviewed and is to remain on bisoprolol 2.5mg daily and has also had spironolactone 12.5mg daily added to prescription by GP. Followed up in HF clinic with no further adverse effects. TFTs to be monitored regularly by GP.

1 patient on Bisoprolol 5mg daily but experiencing side effects. Awaiting baseline U&Es and plan to reduce dose of Bisoprolol to 3.75mg and increase dose of Lisinopril to 30mg daily. Bisoprolol reduced to 3.75mg daily with a major reduction in side effects. Patient reluctant to increase dose of lisinopril at present. However, although dose of bisoprolol has been reduced the patient is much more comfortable taking this dose and so is more likely to continue taking it whereas previously he was wanting to stop the bisoprolol completely due to the side effects.

1 patient with pacemaker referred to GP as presented as unwell in clinic but probably not heart failure related. GP referred to cardiologist.

1 patient not appropriate to increase dose of β-blocker but due to increased fluid retention the dose of furosemide was adjusted and oxpentyfilline was discontinued. Follow up clinic visit showed an improvement in symptoms. Spironolactone 12.5mg daily was initiated in the clinic and has been well tolerated and provided significant improvement in breathlessness.

4 patients in this group have either did not attend or cancelled their appointments due to holidays.