Impact of a specialist mental health pharmacy team on medicines optimisation in primary care for patients on a severe mental illness register: a pilot study

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Received 23 January 2018
Revised 22 May 2018
Accepted 14 June 2018
Published Online First 2 July 2018

EAHP Statement 4: Clinical Pharmacy Services.

ABSTRACT

Objective Medication arrangements for patients with severe mental illness (SMI), including schizophrenia and bipolar disorder, can be complex. Some have shared care between primary and secondary services while others have little specialist input. This study investigated the contribution a specialist mental health clinical pharmacy team could make to medicines optimisation for patients on the SMI register in primary care. Research shows that specialist mental health pharmacists improve care in inpatient settings. However, little is known about their potential impact in primary care.

Method Five general practice surgeries were allocated half a day per week of a specialist pharmacist and technician for 12 months. The technician reviewed primary and secondary care records for discrepancies. Records were audited for high-dose or multiple antipsychotics, physical health monitoring and adherence. Issues were referred to the pharmacist for review. Surgery staff were encouraged to refer psychotropic medication queries to the team. Interventions were recorded and graded.

Results 316/472 patients on the SMI register were prescribed antipsychotics or mood stabilisers. 23 (7%) records were updated with missing clozapine and depot information. Interventions by the pharmacist included clarifying discharge information (12/104), reviewing high-dose and multiple antipsychotic prescribing (18/104), correcting errors (10/104), investigating adherence issues (16/104), following up missing health checks (22/104) and answering queries from surgery staff (23/104). Five out of six interventions possibly preventing hospital admission were for referral of non-adherent patients.

Conclusion The pharmacy team found a variety of issues including incomplete medicines reconciliation, adherence issues, poor communication, drug errors and the need for specialist advice. The expertise of the team enabled timely resolution of issues and bridges were built between primary and secondary care.

INTRODUCTION

Specialist mental health pharmacists have been working successfully in secondary care to improve medicines optimisation for patients with severe mental illness (SMI) including bipolar disorder and schizophrenia.[1] Interventions include providing drug information to staff and patients, promoting drug adherence and ensuring safe and effective medicines use.[2] Issues of particular concern include antipsychotic polypharmacy and high-dose antipsychotic prescribing, which are poorly evidenced and can increase side effects such as arrhythmias and movement disorders.[3] Patients with schizophrenia and bipolar disorder are also more likely to die early due to health problems,[4] which may in part be due to metabolic effects of medication. Annual physical health monitoring is recommended but can be missed. It has also been estimated that up to half of people with schizophrenia and bipolar disorder do not take their medication as prescribed, which may increase relapse and suicide rate.[5]

In the last 20 years, there has been a significant reduction in mental health beds.[6] Some patients may be cared for in the community by community mental health teams (CMHTs), which form part of secondary care. However, increasing numbers of people are being cared for by solely by their general practitioner (GP) in primary care. Initially, there is a shared care approach with psychotropic medication being initiated and monitored by secondary care. The GP then takes over prescribing and monitoring once a patient is stable. In England, people with an SMI are included on an SMI register in each GP practice and practices are monitored to ensure appropriate care delivery. GPs have raised concerns reporting a need for increased knowledge and competence regarding treatment and diagnosis of mental health conditions and improved co-operation between primary and secondary care.[7] Pharmacists working in primary care may also lack the confidence and skills needed to address medication issues.[8] Patients are also concerned with 22% reporting they needed more specialist input.[9]

This study aimed to explore the gaps in service provision relating to medicines and determine whether a specialist pharmacy team could provide useful input for patients on the SMI register. In primary care, specialist input is uncommon, although some benefit has been demonstrated for depression and dementia[10 11]; however, involvement of specialist mental health pharmacists for SMI in a GP setting has not been explored.

METHOD

The project covered five surgeries across Leeds, a city in the UK, over a 12-month period from March 2016 to February 2017. None of the surgeries directly employed a clinical pharmacist. A pharmacist and pharmacy technician were each allocated half a day per week per surgery. The

To cite: Raynsford J, Dada C, Stansfield D, *et al*. *Eur J Hosp Pharm* 2020;**27**:31–35.

pharmacy technician undertook a preliminary audit of patients on the SMI register. Patients prescribed antipsychotic or mood-stabilising drugs were identified. Information was collected on completed physical health checks and high-dose and multiple antipsychotic prescribing. Medicines reconciliation was also carried out by comparing primary and secondary care patient records, with particular attention paid to patients on clozapine and depot antipsychotics. Missing information was updated in both primary and secondary care systems. The GP prescription record was scrutinised to check that prescriptions were being ordered by patients. A list of patients receiving depots from the practice nurse was obtained and patients who did not regularly attend were identified. Instances of non-adherence, missing physical health checks and other areas of concern were highlighted and referred to the pharmacist for further investigation and intervention.

The pharmacist reviewed the medication of all patients referred by the technician using both GP and secondary care records. Information was recorded and analysed using Excel. The pharmacist introduced the project to the surgeries and made themselves available for support with mental health medication queries. Queries were sent using a task system on practice information systems, with tasks being checked weekly when surgeries were visited. Where concerns were raised, the pharmacist liaised with consultants, care co-ordinators, GPs, practice nurses and community pharmacists to resolve them. Interventions carried out by the pharmacist were assessed and graded using a validated scale adapted from Nathan *et al*.[12] Gradings were independently assessed by a second pharmacist. An intervention was defined as any action taken with the aim of modifying the process of use of drugs. An education and training session was also organised on depot medication and shared care guidance as this was identified as being of particular concern by surgery staff. Training sessions were also organised for staff in secondary care to raise awareness of issues faced in primary care.

RESULTS

The pharmacy technicians reviewed the records of 472 patients on the SMI register. Moreover, 316 (67%) of these were currently prescribed antipsychotics or mood stabilisers. The technicians referred 197 cases to the pharmacists for review. Interventions were needed in 66 cases.

Pharmacy team interventions

Pharmacy technicians identified 23 patients on clozapine, an antipsychotic which is always prescribed by secondary care. In five cases (22%), this was not documented on GP systems and systems were updated. A total of 66 patients were prescribed depot antipsychotics, which were prescribed and administered by secondary care in 37 (56%) patients. In 18 (27%) cases, depots were not recorded on GP systems and systems were updated with missing information. Missing letters and allergy status were also added to GP systems and secondary care systems. Staff at GP surgeries also raised queries with the pharmacist resulting in a further 38 interventions. Some of these related to more than one patient. A breakdown of the causes for pharmacist intervention is shown in table 1.

Table 1 Causes of pharmacist intervention

Cause of intervention	Number of interventions (percentage)
High-dose antipsychotic	11 (10.6%)
Antipsychotic polypharmacy	7 (6.7%)
Adherence issues	16 (15.4%)
Blood test overdue	16 (15.4%)
Blood test out of range	6 (5.8%)
Drug error	10 (9.6%)
Discharge issues	12 (11.5%)
Advice requested	23 (22.1%)
Other	3 (2.9%)
Total	104

High-dose and combination antipsychotics prescribing

All instances of high-dose (n=11) and multiple (n=20) antipsychotics prescribing were referred to the pharmacist for review who ensured that all identified patients received input from secondary care. Standards of additional monitoring and review suggested by the Royal College of Psychiatrists[13] would be difficult to maintain in primary care. As a result, five (45%) patients on high doses were referred to specialist services. Seven cases (35%) of combination prescribing were discussed with GPs or referred to secondary care for review where rationale was unclear or prescribing had occurred some time ago. One case involved a patient on three antipsychotics, which were successfully reduced at the surgery. No further intervention was deemed necessary for 13 (65%) patients on multiple antipsychotics. These patients were under shared care between the CMHT and GP. Combinations involved clozapine plus aripiprazole or amisulpride, believed helpful in treatment-resistant schizophrenia.[14]

Adherence issues

All 16 instances where prescriptions had not been ordered were investigated. In eight (50%) cases, CMHTs were contacted and informed. In many cases, they were unaware their patient was non-adherent. In two cases, where there was no current CMHT involvement, urgent appointments were given by CMHT to review the patient and medication was restarted. In six (38%) cases, the patients had stopped for sound reasons or were abroad for extended periods and GP records were updated accordingly.

Physical health monitoring issues

In 22 cases, physical health monitoring involving blood tests or ECGs were referred to the pharmacist. Results were overdue in 16 (73%) cases and out of range in 6 (27%) cases. Reasons for overdue tests included patient not attending despite requests from surgery, lack of clarity whether tests should be done by primary or secondary care and patient being abroad for an extended period. Clarity was sought where possible and non-adherent patients were seen in clinic, contacted over the phone or referred to secondary care for follow-up if deemed necessary. Where results were out of range, repeat tests were requested and prescribers notified. Some patients were being monitored twice—at CMHT clinics and the GP surgery, with neither team aware of this duplication.

Drug errors

Ten cases of drug error were discovered. All were referred to the pharmacist and corrected. Errors included wrong doses and unclear directions. Prescribers were contacted and informed as feedback has been shown to help reduce errors.[15] In 50% of cases, errors were due to poor communication from secondary care and the remaining 50% were due to instructions from secondary care being missed by surgeries.

Table 2 Graded interventions

Grade	Meaning	Number of interventions (%)
1	Very significant hospital admission prevented	6 (5.8%)
2	Significant improved outcome if changed	42 (40.4%)
3	Somewhat significant understanding increased	32 (30.8%)
4	No clinical significance	24 (23.1%)

Discharge issues

Eleven cases of incomplete or unclear discharge information highlighted communication issues between primary and secondary care. This is likely to be an underestimate of the problem as not all surgeries routinely communicated this. Investigation showed poor understanding of shared care guidelines, with GPs being asked to titrate or start antipsychotic medication when the guidelines state this should be done by secondary care. In other cases, information was missing, for example no reasons given for starting and stopping medication in hospital and no details of physical health checks carried out. GPs were often left uncertain whether they were responsible for physical health monitoring or depot administration and who to contact if patients were non-adherent, experienced relapse or wished to change or stop their medication. The pharmacist fed each case back to the staff responsible and education on discharge information was provided to secondary care healthcare professionals.

Advice

Advice was sought on a diverse range of psychiatric medication issues, mainly by GPs. Examples include options for patients responding poorly to medication, antipsychotic reducing regimes, side effect management and depot intervals.

Grading of interventions

Interventions were graded in an attempt to ascertain their impact, using an adapted scale (table 2).[12] Five of the six interventions of greatest significance were for referral of non-adherent patients. One was due to a drug error on the GP system. Grade 2 interventions included advice given where it would impact patient care, referrals for high-dose monitoring and overdue physical health checks. Grade 3 interventions included cases where advice helped to clarify prescribing.

DISCUSSION

This study aimed to investigate whether a specialist mental health pharmacy team could make improvements in medicines optimisation. The issues raised such as non-adherence, polypharmacy and communication problems between primary and secondary care have all been cited as areas where pharmacists have an important role to play in primary care.[16]

Medicines reconciliation by registered pharmacy technicians has been shown to be an effective way to rectify discrepancies in inpatient mental health services.[17] In this study, technicians identified discrepancies in both the primary and secondary care medication records and updated information, for example information on clozapine and depots. Omissions such as this are reported to be the most common form of discrepancy because they are prescribed by specialist services.[18 19] Clozapine can cause serious complications such as agranulocytosis, myocarditis and severe constipation. Smoking cessation can increase levels leading to severe toxicity[20] If the GP is unaware of the full medication picture, reasons for physical ill health may be missed.

The preliminary audit was also carried out by technicians who identified and solved problems, for example contacting patients who needed to attend for depots. The pharmacist was able to concentrate on more clinically focused issues that were either referred from the surgeries or from the technician, enabling a more streamlined process. Only 316 (67%) of patients on the SMI register were on antipsychotics or mood stabilisers, an unexpected finding. This was explored in one surgery and reasons included inaccurate coding or past symptoms that no longer required treatment with these medications.

Many surgery staff we spoke to felt that communication between primary and specialist mental health services needed improvement. Incomplete discharge information from secondary care caused concern and wasted staff time. Such issues have been widely reported[18 19] and can result in readmission, severe harm and fatalities.[21] A number of measures were in place that are believed to improve the communication of information including a computerised shared care record and a standardised psychiatric discharge summary,[3 19] but problems with these measures were found. The preliminary discharge letter from hospital was often not followed up with more detailed communication. The standardised template was also only used by medical staff despite the fact that care co-ordinators (commonly nurses or occupational therapists) also discharged patients to GPs. The shared care record was not fully integrated with GP systems, so medication prescribed by secondary care services did not automatically appear on GP lists. Many of these issues could be improved with an integrated information system.[22]

Staff also welcomed having specialists available in the surgeries to offer advice on mental health medication. Secondary care offers a pharmacist medicines information service, but this is rarely accessed suggesting a visible presence in the surgeries' increased accessibility of this service. Education sessions were held by the pharmacy team involved in the project for both primary and secondary care staff to highlight some of the issues uncovered and increase understanding between services.

A relatively low number of patients (22 (7%)) had outstanding health checks relating to their medication. Shared care guidance and automatic recall systems at the surgeries might account for this.[23] Gaps were typically due to patients not attending the surgery despite texts and letters. Numerous reasons have been put forward as to why some people do not engage including lack of information and limited awareness of cardiovascular risk.[24] All non-attenders were referred to CMHT as additional specialist input may help to encourage these patients.[23] Many patients had only one or two outstanding tests, suggesting a lack of consistency in monitoring, for example blood tests and weight checks were carried out by different people who lacked specialist knowledge. Educational sessions were provided by the pharmacist in an attempt to address this. Tests carried out by secondary care were not always communicated with GPs leading to gaps in the records and duplicate testing. Again, an integrated IT system would be beneficial.

Non-adherence led to five out of a total of six interventions considered to be of high significance. Patients not attending for depot medication caused a great deal of concern for some practice nurses who had limited time to follow up patients. Studies have shown that practice nurses may lack confidence and training in this area.[25] The extent of non-adherence is likely to be an underestimate as GPs' systems highlighted only those prescriptions not ordered by patients. They do not show whether medication is actually collected from pharmacies or taken by patients. Adherence is complex and there are many reasons why patients do not take medication as prescribed including side effects, forgetting

and lack of efficacy.[26] Our study showed that care co-ordinators (who may have little medication training) were often unaware that their patients were not ordering medication, which suggests that this aspect may be neglected during consultations.

High doses of antipsychotics were prescribed in 11 (3.5%) of patients and 20 (6%) were on combination antipsychotics. These figures are similar to those from other studies in primary care.[27] We referred patients to secondary care as standards for regular monitoring and review suggested by the Royal College of Psychiatrists[13] would be difficult to maintain in primary care.

Pharmacists are recognised as an underused resource and are currently being trained to take on extended clinical roles in GP surgeries to meet increasing demands on GP services.[28] This study suggests that specialist input may also have value in an area such as mental health where confidence of both GPs and general pharmacists may be low.

Limitations

This is a small exploratory study incorporating aspects of audit and service evaluation, as such firm conclusions about the use and cost-effectiveness of a specialist service cannot be firmly drawn. We were also unable to follow up referred patients to see whether there was any dosage reduction or rationalisation of prescribing. However, the project highlighted gaps in service provision, which could be addressed by a specialist psychiatric pharmacy team. Grading of interventions is by its nature subjective and relies on 'guessing' outcomes if there had been no intervention. Using two pharmacists to independently evaluate the grading mitigates this only in part, but the authors felt there was some value in showing how many interventions potentially prevented hospital admission.

Face-to-face clinics were outside the scope of the project, which will have limited the impact of the interventions in some instances. Further research is needed into the impact a specialist non-medical prescriber (NMP) could have and the second phase of the pilot hopes to incorporate this aspect. Cases of high-dose and multiple prescribing could potentially be monitored on an ongoing basis by a specialist NMP in primary care. NMPs could also benefit patients with complex needs who do not reach the threshold for acceptance into CMHT, for example patients who are mentally well who wish to reduce and stop medication.

Audits were time consuming and finding mental health information on GP systems was difficult. Information about rationale for drug choices and mental healthcare plans do not have an obvious location in GP systems. Some template development and building of searches is ongoing, and this could help automate audits in the future and provide easier access to information. Clearer referral criteria for technicians to pharmacists could reduce the time spent reviewing records where no intervention was needed, and this will be addressed in the next phase of the project

CONCLUSION

A variety of medicines management issues were discovered including incomplete medicines reconciliation, physical health monitoring, adherence, poor communication, drug errors and the need for specialist advice. Some of these problems are potentially serious if left unresolved. An integrated IT system would help resolve many of the issues, but this is unlikely to occur soon. The strength of the specialist mental health team was that many issues could be resolved quickly due to expertise, experience and working knowledge of services and contacts in secondary care. The awareness of the issues faced by staff in primary care was also raised and shared. Specialist mental health teams can help to reduce risks, resolve issues and build bridges between primary and secondary care, improving the care provided to the mental health patients in primary care settings.

Key messages

What is already known on the subject

- Patients with severe mental illness are increasingly cared for in primary care, and access to specialist services can be difficult.
- Patients with severe mental illness can have complex medication needs.
- Specialist mental health pharmacists improve care in secondary care and specialist community services.

What this study adds

- A specialist mental health clinical pharmacy team can identify multiple medicines issues and improve medicines optimisation in patients with severe mental illness in primary care.
- A specialist mental health pharmacy team can help build bridges between primary and secondary care.

Acknowledgements Heather Edmonds from North Leeds CCG for funding the post. Clair Ranns for her assistance in introducing us to the staff and systems in primary care. Dawn Fleming for reviewing the manuscript.

Contributors All cited authors have contributed to this paper either in carrying out the project or contributing to the writing of the manuscript. JR: pharmacist interventions, collating data and writing it up. CD: planning and supervision of the project. DS: pharmacist technician, collecting data and carrying out initial audit in GP practice. TC: pharmacist interventions, data collection.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Disclaimer The views and opinions expressed in this article are the authors' own and might not reflect those of the NHS.

Competing interests None declared.

Patient consent Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement There are no additional unpublished data from this study.

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