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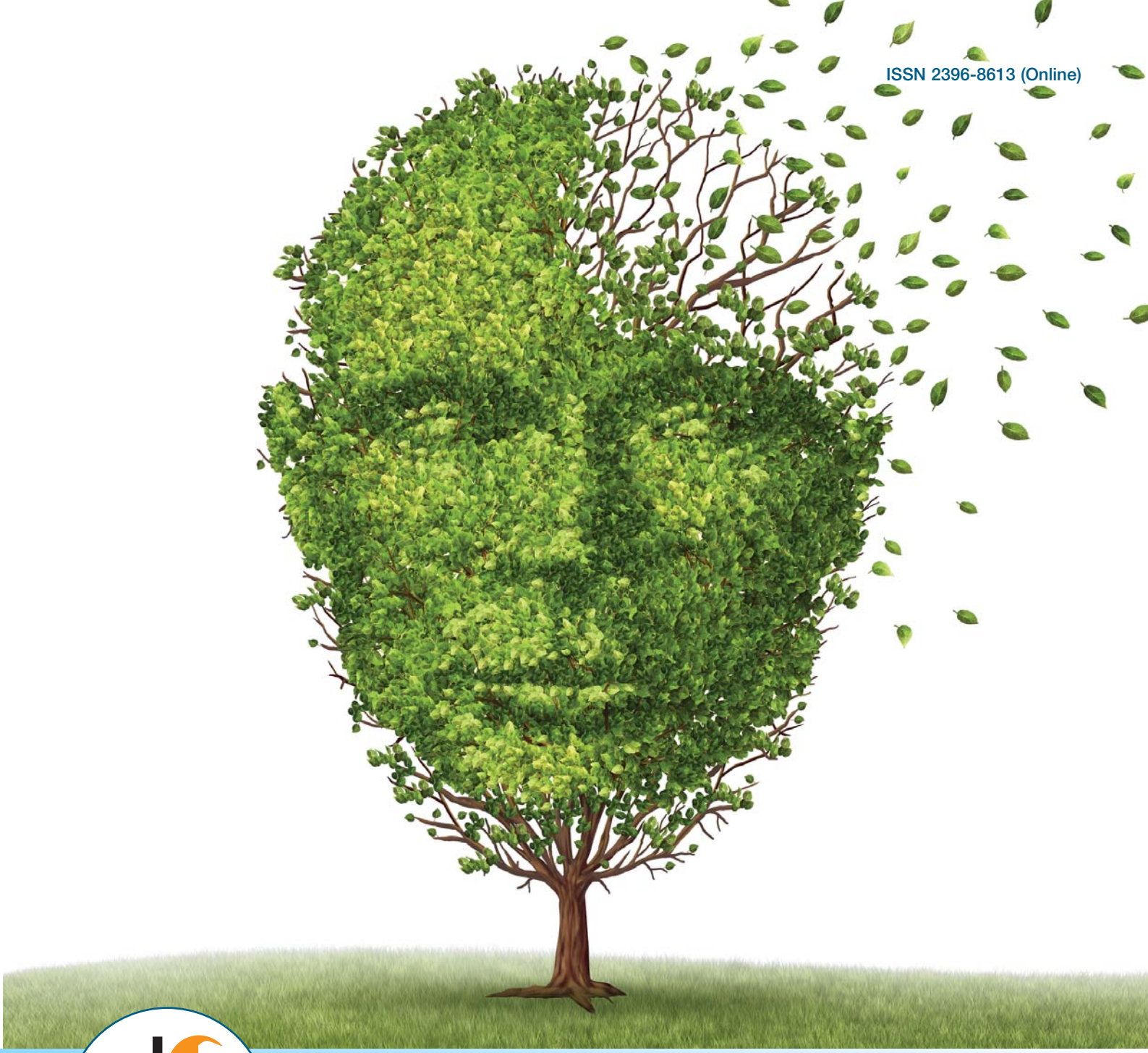

# Journal of Medicines Optimisation

*Developing a patient-centred approach to get best outcomes and value from medicines*

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## In this issue:

## AIM OF THE JoMO

Medicines optimisation is a person centred approach to safe and effective medicines use to ensure that people obtain the best possible outcomes from their medicines. The aim of the JoMO is to contribute to that process and play an influential and key part in shaping better patient care and the role that medicines can play. The JoMO provides a vehicle to enable healthcare professionals to stimulate ideas in colleagues and/or disseminate good practice that others can adapt or develop to suit their local circumstances.

## READERSHIP

The JoMO is made available on a controlled circulation basis to healthcare professionals (e.g. pharmacists, doctors, nurses, etc) and industry colleagues who work with them.

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A range of experience covering various clinical specialties, organisations and disciplines is available to help steer the development of the JoMO and ensure that it provides a useful resource for readers. Details of membership of the group are shown at the end of the journal.

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## COMMUNICATION CHANNELS

A learned journal should open its pages to scholarly debate and we hope that readers will share their views and questions in the following ways.

### LINKEDIN

Readers who use LinkedIn may like to know that there is a JOMO LinkedIn Group. It is a closed group but everyone who requests the JoMO will be permitted to join. Readers are encouraged to comment upon and discuss items about medicines optimisation.

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Constructive comment to further understanding and debate about a topic is encouraged and welcomed.

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Correspondence may be edited for length, grammatical correctness, and journal style.

Authors of articles discussed in correspondence will be given the opportunity to respond.

The correspondence, together with a declaration of any interests and any subsequent comment from the author, may be published in the Journal and/or on the website.

Please submit your correspondence to the Correspondence Editor (correspondence@jmedopt.com).

## PUBLISHING YOUR WORK

The JoMO aims to disseminate good practice about medicines optimisation to pharmacists, doctors, nurses and other healthcare professionals. The focus is on 'optimisation', which relates to quality and improving patient care, rather than cost aspects.

The JoMO aims to follow the 'Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals' published by the International Committee of Medical Journal Editors (ICMJE) and known as 'The Uniform Requirements' and the Committee on Publication Ethics (COPE) 'Code of Conduct'.

Guidance for Authors is available at http://www.jmedopt.com.

All material should be sent electronically to the Editor-in-Chief (alex.bower@pharman.co.uk).

# Editorial

A key feature of the JoMO is its focus on patients and carers. The contribution in this edition is a 'must-read'! You will discover what it is like for a family member to be the carer for their child who has Down's Syndrome and other health issues. How do they manage, particularly in terms of administering medication? What do they think about the support they have received and what could health professionals do to understand and help further? This is clearly explained in the article, which is all the more illuminating coming, as it does, from an experienced pharmacist. Do open up the hyperlinks, though, to provide further information – and see a masterclass in consultation skills! This article will make many readers think and act differently the next time you speak to a patient or carer.

## Patient/Carer views sought

Do you know of a patient or care who is willing to share their experience of their clinical condition, including with regard to their contact with pharmacists and the management of their medicines?

If you do, please contact alex.bower@pharman.co.uk.

Hearing about the 'bad' as well as the 'good' would be helpful so it could be presented anonymously if wished - the main thing is to learn and develop!

The development of independent prescribing rights for pharmacists could be seen in future years as one of the most significant changes to impact on healthcare and the use of medicines. What is needed to ensure that this becomes reality, however, is a firm evidence base to support the initiative. It is, therefore, encouraging to be able to report on work that does just that. The involvement of an Independent Prescribing Pharmacist in the discharge process at a hospital resulted in a reduction in error rate from 22% to 0.7%, an increase in the accuracy of information transmitted to GPs from 46% to 99% and a reduction in the time taken to discharge a patient from 8 hours 34 minutes to just over 5 hours, and to just over 3 hours following the introduction of a satellite pharmacy. These are impressive results that will help support further expansion of the role.

The importance of seamless care and improving communication at the primary/secondary care interface has been a dominant theme for many years but much remains to be done. An article in this edition reports a success in links between a hospital service and GPs with regard to antipsychotic usage. It has been reported that antipsychotics are used too frequently in dementia and that, in many patients, the potential benefits are likely to be outweighed by the increased risks of cerebrovascular events and all-cause mortality. The outcome of the work was an improvement in the process for patient care across the interface that resulted in a reduction of 32% in the prescribing of antipsychotics in patients with dementia and no mental health co-morbidity.


### HYPERLINKS
References and other resource material as appropriate can be accessed directly via hyperlinks in the Journal.

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# Contents

# A carer's perspective on medicines optimisation

**Barry Jubraj,** *Clinical Senior Lecturer (Medicines Optimisation), King's College London; father/carer to Alexander, who has Down's Syndrome and complex medical needs.*
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## Abstract

*Title*

A carer's perspective on medicines optimisation

*Author*
Jubraj B

Outline
A carer's perspective is provided on managing medicines for a child with Down's Syndrome is provided. Video links illustrate the issues involved and how health professionals can become more helpful to carers.

Conclusion
Clinicians should be exposed to carers as part of their training. Carers should be asked about how they are managing medicines and appropriate support should then be provided.

*Keywords:* Down's Syndrome, egg cup, pharmacists, patient experience.

## Introduction

I jumped at the chance when invited to give a carer's perspective on medicines optimisation. Not because I wanted to complain or be negative; but instead to encourage all clinicians, and particularly those in my own profession of pharmacy, to really believe that they can make a difference to people like me, a carer and a patient. I am not, as you might have gathered, a carer in a professional sense but am very much a carer as a family member who has to look after a loved one.

So, first, the bad news. I'd really like the pharmacists I meet to think more about how hard it might be to manage medicines for my little boy, who is severely disabled. But the good news is that I firmly believe pharmacists have the potential to make a much bigger contribution to supporting carers and those with disabilities with their medicines.

I am fortunate enough (or unfortunate depending on your point of view) to have a number of perspectives on the topic of caring, disability and medicines. I worked as a hospital pharmacist for 25 years, am trained as a teacher and a counsellor; am a patient with two long-term conditions, have been a carer latterly for my mother and, more recently, for my 9 year-old-son, Alexander. He has Down's Syndrome, a severe learning difficulty, uses a wheelchair, glasses and hearing aids, has thickened fluids and suffers with asthma, thyroid disease and reflux. In this article I will aim to frame my reflections around the four principles of medicines optimisation found in the Royal Pharmaceutical Society Guidance:

**https://www.rpharms.com/promoting-pharmacy-pdfs/helping-patients-make-the-most-of-their-medicines.pdf .**

### Principle 1: Aim to understand the patient's experience

I've often wondered how curious clinicians are when they see me and my wife Rosemary coming through the door with Alexander. He is in a wheelchair, makes lovely funny noises and, to us, it's obvious that getting medicines into him or monitoring them isn't going to be straightforward. Alexander's medication routine in the evening is described in a BMJ case report where we outline the regime of two tablets and one liquid dissolved in an egg cup and then thickened:

**http://casereports.bmj.com/content/2015/bcr-2014-208033.full.pdf .**

I'm curious to know your reaction when I say that no hospital or community pharmacist, GP, paediatrician or hospital doctor has ever asked us how we manage to get the medicines into Alexander, or any challenges that we face. I've often wondered if any of the reasons below are true:

- Too busy to think about it.
- Assume that someone else has sorted it out.

- Too scared to ask for whatever reason.

You will see from the following video and debrief where we filmed a consultation about Alexander that the pharmacist was curious and willing to ask me how I was getting on:

What would be helpful to you right now? Making a difference in a short consultation:
**https://player.vimeo.com/video/150664602 .**

Making the difference in a short consultation - the experts' debrief: **https://player.vimeo.com/video/150664603 .**

I would love all clinicians to be that curious and ask me how I am doing as a carer. Carers often have to make things up as best we can – and I have the advantage of being a pharmacist.

### Principle 2: Evidence-based choice of medicines

As a pharmacist, I'm used to following guidance and trying to be aware of the evidence behind that guidance. Experience has taught me that medicine is an art as well as a science and that it's important to be pragmatic and practical. Carers often have the best understanding of the 'big picture' of the person they're caring for and a recent example brought this home to us. Alexander's serum ferritin was low and our paediatrician wanted him, quite rightly, to have a course of iron through the GP. Our paediatrician and GP are excellent clinicians and we discussed the risks of constipation that can be much worse for Alexander because of his low muscle tone and low mobility. Although one could argue that a treatment dose of iron is most appropriate (i.e. three times a day), I pushed very hard for a once daily dose to balance the risk of constipation with restoring the ferritin levels, albeit more slowly, based on the fact that Alexander's haemoglobin was in the normal range. For me as a carer, it was a pragmatic, balanced decision based on my intimate knowledge of Alexander and his wider health picture that we live with day-to-day. We, as parents, are the ones who toilet him and understand his bowel habit.

### Principle 3: Ensure medicines use is as safe as possible

As Alexander's carer, I'm interested in medication safety from two perspectives. Firstly, that the medicines prescribed for him are inherently safe, for example with respect to allergies and interactions. But I'm also concerned about safety with respect to his poor swallow and delayed clearing cough, hence his need for thickened fluids. I also want to be sure that the methods by which I give him his medicines are safe – for example my egg cup technique. This is one reason why the use of 'My Medication Passport' for Alexander has been so helpful.

**https://www.networks.nhs.uk/nhs-networks/my-medication-passport/documents/my-medication-passport-in-bmj-open .**

It contains a list of Alexander's medicines, which means we don't have to explain them again and again at every medical appointment. It also helps clinicians to consider the existing medication list when prescribing something new. It would be helpful if clinicians did a 'sense check' with me on the safety of Alexander's medication use, which would be a neat overlap with medicines optimisation principle 1.

### Principle 4: Make medicines optimisation part of routine practice

As a carer, principle four is about the need for clinicians to develop a culture of being curious, thinking 'outside the box' and delivering excellence in consultation skills from the early years of clinical practice. I have observed junior clinicians looking somewhat perplexed when they encounter Alexander – hopefully not because of him as a person, but I sense a fear of what they might be asked. Experience is clearly helpful in communicating, but education and mind-set are important. Exposure to carers and their experience can help clinicians to gain valuable insights into the world of being a carer, including the stress, the lack of sleep and the worry. A curious mind-set that can tolerate questions you may not be able to immediately answer can lead to valuable and opportunistic encounters with people like me. It really doesn't matter if you don't know the answer immediately! Taking an interest will help me to feel valued and supported in what is often a lonely existence.

## Suggested actions

For curriculum planners and professional bodies:

- Expose trainee clinicians to carers as part of their training.
- Ensure that consultation skills training is embedded in clinical training and continuing fitness to practice programmes.
- Promote a culture of empathy for patients and carers through effective curriculum planning.

For individual clinicians:

- Be curious. Ask someone who may be a carer how they are getting on.
- Invite questions and don't worry if you don't know the answer immediately, or if an answer isn't obvious.
- Be pragmatic. The answer to the compatibility of Alexander's egg cup mixture is likely to be found only in a laboratory. Use your basic understanding of pharmaceutical science to deliver pragmatic and helpful advice.
- Don't say 'I understand'. You don't.
- Smile and say hello. Introduce yourself. It makes a real difference to a carer.

## Declaration of interests

Barry Jubraj reports that he is Alexander's father and this is a personal perspective on his role as his father and carer.

# Pharmacy innovation at discharge - impact of pharmacist non-medical prescribing on quality and streamlining processes

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## Abstract

*Title*
Pharmacy innovation at discharge - impact of pharmacist non-medical prescribing on quality and streamlining processes.

*Author list*
Physick A, Smolski K, Mann S, Price G.

*Introduction*
Having recognised the issues arising from an ineffective discharge process, the Pharmacy Department undertook a project to assess how the process could be changed to bring about benefits to patients and the Trust. Data was collected to determine if utilising prescribing pharmacists in the discharge process could realise benefits in terms of accuracy and timeliness of discharge.

*Methods*
A comprehensive baseline data collection was undertaken to understand the discharge process. Every step was timed so that any inefficiency could be identified, reviewed and improved without compromising safety. The prescribing error rate by the doctor and the accuracy of the documentation of changed medications were also recorded. The impact of a pharmacist prescriber and a satellite pharmacy were subsequently measured using the same data collection tool.

*Results*
During the baseline data collection the average time taken to discharge a patient was 8 hours and 34 minutes. The utilisation of an Independent Prescribing Pharmacist (IPP) reduced the discharge process to 5 hours. The subsequent introduction of a satellite pharmacy reduced the entire discharge process further to just over 3 hours. The prescribing error rate fell from 22% to 0.7% with an IPP. The accuracy of information transferred to general practitioners (GPs) increased from 46% to 99% with an IPP.

*Conclusion*
The initial data collection showed that the discharge process at the Trust was inefficient and potentially unsafe due to prescribing errors by doctors on the discharge prescription and a lack of information being transferred to a patient's GP in primary care. The impact of IPPs demonstrated clear benefits, with the process becoming more streamlined as the patient could be discharged earlier in the day with a more accurate and complete discharge prescription.

*Keywords:* Independent Prescribing Pharmacist, Discharge Pharmacist, non-medical prescribing, NMP, discharge, transfer of information on discharge, satellite pharmacy, prescribing errors, time to discharge.

## Background

A review of patient complaints relating to medicines at Lancashire Teaching Hospitals identified that a high proportion related to poor experience at the point of discharge from the hospital, largely due to delays in receiving discharge medicines. A review of incident reports regarding patient safety issues at discharge also identified aspects of the process in need of improvement. In addition, a large proportion of concerns and complaints raised by local general practitioners (GPs) about medicines related to insufficient information on the discharge summary, especially around aspects such as medications started, changed or stopped during admission. Anecdotally, a similar picture is seen in many Trusts across the UK, indicating there is a clear need to revise the current processes for the management of prescriptions at discharge.

effectiveness of the traditional discharge process, where medical staff generated the discharge prescription. Data collection took place on three acute medical wards – the medical assessment unit (MAU), the respiratory ward (w23) and the gastroenterology ward (w24).

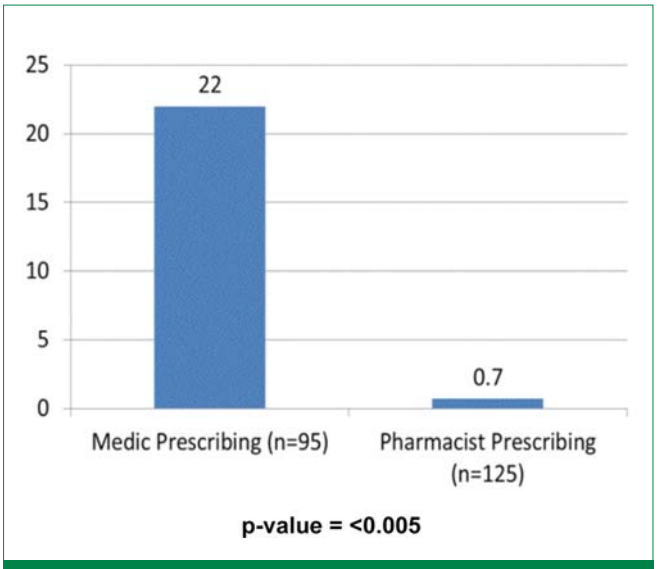
During the second phase of data collection (December 2014/January 2015) the same data set was collected to capture the effectiveness of a new discharge process where an IPP was seconded to undertake the prescribing role in the discharge process. The patients for discharge were identified through communication at ward level with the discharge co-ordinator, nurse in charge and the ward pharmacist. The live ward 'white-board' was also used as a two-way communication tool between the aforementioned staff groups to keep all parties updated during the discharge process.

Finally, during the third period of data collection (January/February 2015), an IPP continued to prescribe the discharge medication in the same manner as during the second phase but, additionally, the medicines were prepared using a satellite pharmacy close to the wards rather than in the main pharmacy department.

Data collected relating to error rate and timeliness of processes was reviewed for accuracy by an independent practitioner.

## Results

The analysis of data collected from phase 1 (95 patients, 782 prescribed items) and 2 (125 patients, 1149 prescribed items) of the study identified a very significant reduction in prescribing errors (97% reduction) when the prescribing duties transferred to the IPP, as demonstrated in Graph 1.




**Graph 1: Prescribing error rate (% prescribed items)**

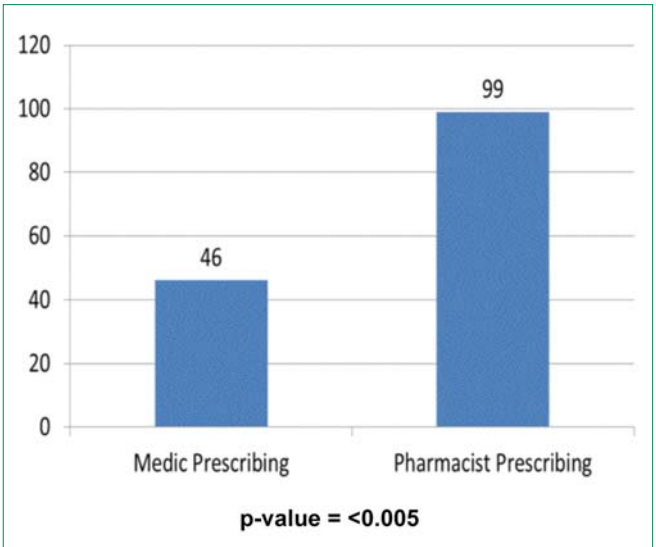
The prescribing errors were identified by the ward pharmacist performing the clinical check of the discharge prescription. It should be noted that the ward pharmacist was instructed to complete the same clinical check of the discharge prescription regardless of which type of prescriber was involved. This helped to ensure no bias was introduced into the data collection process. The prescribing errors recorded were subsequently categorised as either minor, significant, serious or potentially lethal using the same model as reported in Appendix D (Severity Error Classification Scheme) of the EQUIP study,[4] where examples of the types of errors associated with each category can be found - see pages 207/208 at:

http://www.gmc-uk.org/FINAL_Report_prevalence_and_causes_of_prescribing_errors.pdf_28935150.pdf .

Some examples of the types of errors seen for the different categories at Lancashire Teaching Hospitals during the data collection period are shown below:

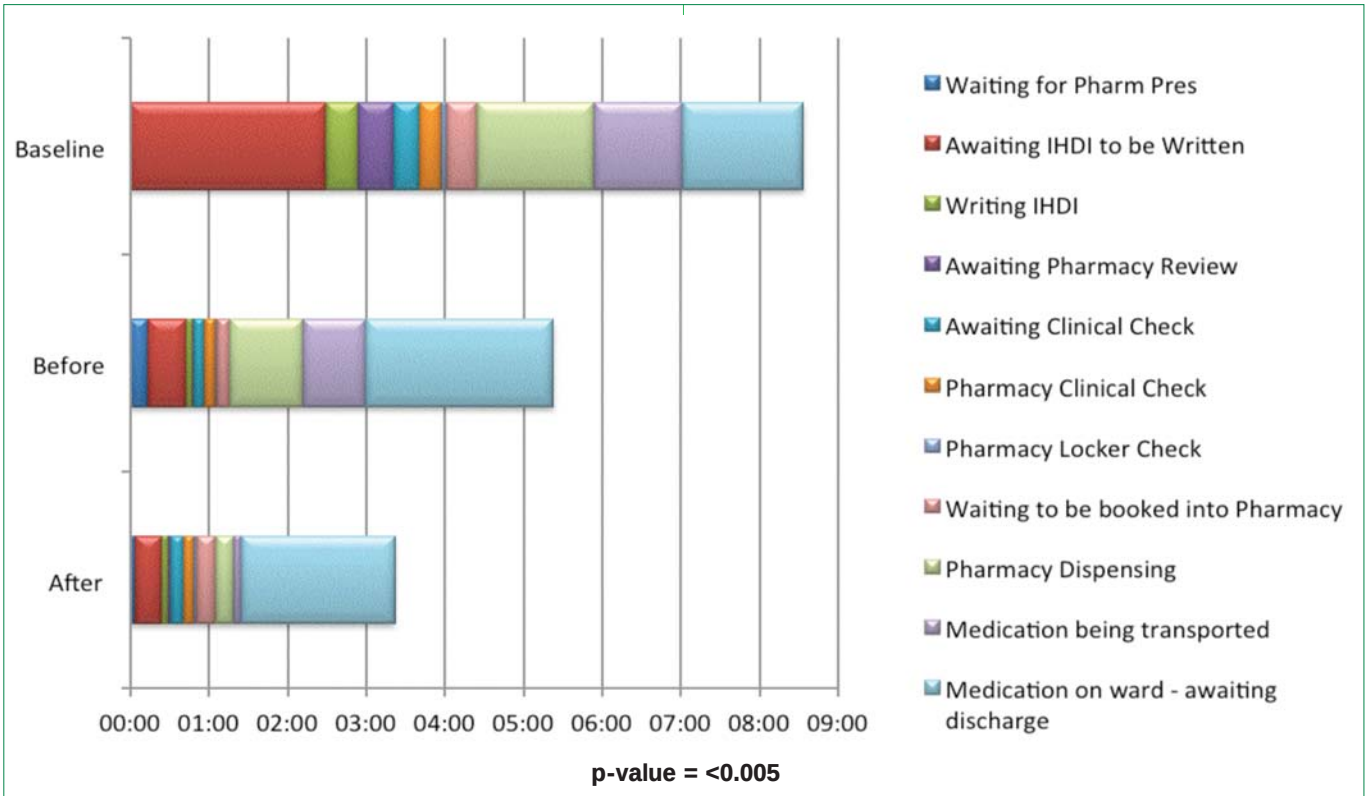
- Minor – no frequency stated for hydrocortisone cream on discharge prescription.
- Significant – amlodipine missing from discharge prescription.
- Serious – aspirin stopped due to GI bleed on inpatient chart but prescribed on discharge prescription.
- Potentially lethal – insulin not prescribed on discharge prescription.

An analysis of the accuracy of information (medicines started, stopped and changed during admission) captured in the initial discharge letter also showed a very significant improvement with the introduction of the IPP to the prescribing role in the process, as demonstrated in Graph 2. The proportion of patients with a discharge letter containing accurate information about their medicines more than doubled, increasing from 46% of patients at baseline to 99% of patients when an IPP generated the discharge prescription.




**Graph 2: Accurate transfer of Information at Discharge (% patients)**

The data captured relating to the times taken for the different stages of the discharge process are represented in Graph 3. The baseline phase of data collection is represented in the top chart, phase 2 data in the middle chart and phase 3 in the bottom chart.




**Graph 3: Times taken for the stages of the discharge process**

**Definitions of terms**

***IHDI:*** Immediate Hospital Discharge Information.

***Awaiting Pharmacy Review:*** time elapsed when IHDI is actually written but the Pharmacy team are unaware of the need to process.

***Awaiting Clinical Check:*** time elapsed that pharmacy are aware of an IHDI but attending to other urgent clinical needs e.g. review of clinical priority patients, processing other discharges.

***Pharmacy Clinical Check:*** involves identifying potential pharmacotherapeutic problems by collating and evaluating all relevant information that is available at the time before a medicine is supplied.

The key points to note are:

- The total time for the discharge process from the time the patient is told they can go home to the patient leaving the ward reduced from an average of 8 hours and 34 minutes at baseline to just over 5 hours in phase 2, and just over 3 hours in phase 3.
- The time to an accurate discharge prescription being available reduced from 4 hours at baseline to just over 1 hour in phase 2, and just under an hour in phase 3.
- The time to dispense the medicines (measured from the time of accurate discharge prescription to discharge medicines available on the ward) reduced from 3 hours at baseline to just over 1 hour 30 minutes in phase 2 and just over 30 minutes in phase 3.

## Discussion

There is a clear value in utilising patient feedback, reviewing incident reports and collecting robust data to evaluate the effectiveness of work processes and identify aspects that can be improved. The engagement of not only the ward based pharmacy teams but the wider multidisciplinary team, hospital management and external stakeholders were key to the success of this project.

The key objectives of the study have been achieved:

- *Reduction in the prescribing error rate*
  The high rate of prescribing errors recorded with junior doctor prescribing at Lancashire Teaching Hospitals is consistent with that found in other Trusts across the region/country as described in the EQUIP study.[4] There are a number of contributing factors to the high prescribing error rate of the junior doctors, such as limited knowledge/experience of medications, competing tasks, working under pressure to generate the discharge prescription and over-reliance on pharmacists to correct mistakes. Prescribing pharmacists undergo medicines management training (undergraduate and postgraduate combined) for approximately 8 years before they become prescribers. The extent of this training may contribute to the very low error rate seen in the data for the prescribing pharmacists. The low error rate is comparable to that reported in the Northumbria study.[3]
- *Improved transfer of accurate information to primary care*
  A previous study in Liverpool[5] presented data on the large number of hospital admissions due to adverse drug reactions (6.5% of all admissions), the majority of which were avoidable medication errors. The data presented in this paper illustrated that less than half the patients had a discharge letter that accurately captured information about their medicines when junior doctors generated the prescriptions. The consequence of this is that the GP is

| Process | Process Value/Waste | Benefit of Prescribing Pharmacist | Benefit of Satellite Pharmacy |
|---|---|---|---|
| Awaiting Immediate Hospital Discharge Information (IHDI) to be written | Waste | Greater availability of IPP to write discharge more promptly. | Not Applicable (N/A) |
| Writing IHDI | Value | Expert knowledge of medication allows quicker generation of IHDI. | N/A |
| Awaiting Pharmacy Review | Waste | Improved communication between IPP and ward pharmacist results in reduced time wastage. | N/A |
| Awaiting Clinical Check | Waste | Ward pharmacist aware of discharge and can plan resources to complete discharge in a timely manner. | N/A |
| Pharmacy Clinical Check | Value/Waste | Ward pharmacist can complete clinical check faster as less prescribing errors on discharge as well as all relevant information fields completed e.g. changed/ stopped meds and allergies. | N/A |
| Pharmacy Locker Check | Waste | N/A | N/A |
| Waiting to be booked into pharmacy | Waste | Earlier generation of discharge prescription avoids bottleneck of large numbers of discharge prescription in the dispensary late in the afternoon. | Faster turnaround as focus of satellite pharmacy is medical ward discharges. Remove the need for a fax machine. |
| Pharmacy Dispensing | Waste | Earlier generation of discharge prescription avoids bottleneck of large numbers of discharge prescription in the dispensary late in the afternoon. | Faster turnaround as focus of satellite pharmacy is medical ward discharges. Remove the need for a fax machine. |
| Medication transported to ward | Waste | N/A | Faster delivery as satellite pharmacy in close proximity to medical wards. |
| Medication on ward – awaiting discharge | Waste | N/A | N/A |

**Table 1: Impact of Prescribing Pharmacist and satellite pharmacy during phase 2 and 3 of data collection**

unaware of decisions made during the inpatient stay in hospital and may not, therefore, be able to prescribe to continue the treatments as intended, which may result in patient attendances at the Emergency Department (ED) and readmissions due to medication related problems. The transfer of information relating to medicines was greatly improved with the introduction of the prescribing pharmacist to very nearly 100% accuracy.

- *Enhancing the patient experience due to an earlier discharge*
  Very significant improvements to the timeliness of medicines supply for discharge were seen with the introduction of the prescribing pharmacist and satellite pharmacy. The introduction of the prescribing pharmacist resulted in the earlier generation of an accurate discharge prescription which arrived in the dispensary earlier in the day, leading to an improvement in workflow through the dispensary and avoiding the usual bottleneck caused by the very large proportion of discharge prescriptions arriving in the dispensary late in the afternoon. The introduction of the satellite pharmacy next to the acute medical wards led to a very significant improvement to the dispensing turnaround times. The net effect of these changes was an increase in the proportion of patients with all their discharge medicines at the bedside ready to go by 1.30pm from 14% at baseline to 50% in phase 2. This has not only had a very positive effect on the patient experience, but also a positive effect in supporting patient flow in the organisation and achievement of the 4 hour target in ED.

Additional benefits realised from introducing the new process for discharge:

- *Medical staff time released for other patient care activities.*
  After the completion of the ward round, junior medical staff are able to focus on attending to critically ill patients, making urgent referrals, ordering scans, taking bloods and seeing outliers on other wards. The clinical narrative and follow-up sections of the discharge letter can be completed by the doctor at a more convenient time later in the day after the urgent duties are completed.
- *Enhanced pharmacy status in the multidisciplinary team*
  Pharmacy was often seen as the cause of delays to discharges because patients had to wait for their supplies of discharge medicines. The data collected in this study clearly demonstrates there were a number of non-pharmacy factors involved in the delays to discharges. The new discharge process, utilising the prescribing pharmacists and satellite pharmacies, has enhanced the status of the pharmacy team – who are now clearly viewed as 'enablers' to promoting good patient flow.
- *Recruitment and retention of pharmacy staff*
  Both initiatives (generalist prescribing role and satellite pharmacy) have been very positively received by pharmacy staff. There is a clear career pathway for the pharmacists which has supported the recruitment and retention strategy, from pre-registration trainee – band 6/diploma pharmacist – band 7 senior pharmacist (undertake the prescribing course) – band 8a prescribing pharmacist (generalist). The development of the band 8a prescribing pharmacist position has enabled highly trained members of staff to be mainly ward based with significant benefits realised. For example, they can act as a support mechanism for junior pharmacists on rotations, write and implement ward based policies/procedures and maintain a patient facing role utilising all the knowledge and skills gained through day to day practice as a clinical pharmacist. The introduction of the satellite pharmacy has liberated more staff from the Pharmacy Department to work closer to the patients in the ward environment.

## Conclusion

This paper captures the benefits of using feedback from patients and stakeholders to inform service review processes. The paper also demonstrates the benefit of designing the service review such that robust data is collected to give a clear picture of the current and future process, and a clear measure of the benefits of the changes introduced.

The phase 1 data collection (baseline) showed that the discharge process at the Trust was inefficient and was potentially unsafe due to prescribing errors by junior doctors. The data also highlighted that a very large proportion of patients had incomplete information relating to medicines captured in the discharge letter and transferred to the patient's GP. This is not unique to Lancashire Teaching Hospitals; a similar picture is seen in many Trusts across the UK. The impact of introducing IPPs to the discharge process resulted in clear benefits, with the new process being safer in terms of reduced prescribing errors and more streamlined (resulting in the patient being discharged earlier in the day and a more accurate and complete discharge letter being sent to the GP).

## Future Developments

Since collecting the data for this paper, the team of prescribing pharmacists at Lancashire Teaching Hospital has been expanded to provide the services outlined above to all acute medical wards. Plans are in place to train more prescribing pharmacists and expand the team further so that the model can be implemented Trust-wide across all clinical specialities.

Thinking beyond the traditional 'niche' roles of non-medical prescribers has enabled a more generalist role to be explored. As long as the Pharmacist Prescriber is prescribing within their field of competence, this is a great opportunity to utilise the unique knowledge and skills of pharmacists. This is particularly relevant when the impact of reduced numbers of junior doctors in the coming years is considered and more so with the challenges presented by the recent introduction of salary caps for locum medical staff. Many Trusts are exploring the roles of Physicians Associates (who currently cannot prescribe) and it is essential that the unique skills of a generalist prescribing pharmacist are developed to complement the multidisciplinary team.

## Declaration of interests

None of the authors has anything to disclose.

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# Reducing antipsychotic use in patients with dementia

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## Abstract

*Title*

Reducing antipsychotic use in patients with dementia.

*Author list*

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*Introduction*

In response to the Banerjee report published in 2009, Bedfordshire Clinical Commissioning Group (CCG) recognised that work needed to be done within GP practices to reduce the level of inappropriate prescribing of antipsychotics for the behavioural and psychological symptoms of dementia.

*Methods*

Following a baseline audit in 2013 conducted by the medicines management team a practice based audit was devised and incentivised as part of the 2014-15 Prescribing Incentive Scheme.

GP practices searched their patient records for patients with dementia who were prescribed an antipsychotic drug on current repeat and collected data for these patients on a standardised data collection form. These were submitted to the medicines management team for collation along with an individualised action plan for the practice identifying prescribing issues and solutions. This was followed by a re-audit seven months later which was also submitted to the medicines management team.

*Results*

Approximately 80% of initiations were made by secondary care and almost half of antipsychotics had been prescribed for more than two years. Between baseline and phase two of the audit prescribing of antipsychotics in patients with dementia and no mental health co-morbidity reduced by 32%. The frequency of three monthly reviews between phase one and phase two of the audit increased by 43%. Those with a documented risk/benefit discussion of antipsychotic use increased by 83%.

*Conclusion*

Following the audit results and suggestions made by practices in the action plans, the secondary care providers have been approached requesting that at discharge to primary care GPs are provided with patient action plans that include the antipsychotic indication and guidance for review. GP computer system templates have also been devised, accessible to all practices, to aid as an evidence based tool for initiation, review, and cessation of antipsychotic drugs for dementia.

*Keywords:* dementia, BPSD.

## Introduction

In 2009, Professor Sube Banerjee published a report investigating the use of antipsychotics in dementia.[1] The report identified that antipsychotics are used too frequently in dementia and that in many patients the potential benefits are likely to be outweighed by the increased risks of cerebrovascular events and all-cause mortality. In conclusion, it was estimated that the level of prescribing nationally should be reduced by two thirds over a period of three years. This reduction should be supported by introducing alternative non-pharmacological strategies as detailed in National Institute for Health and Care Excellence (NICE) guidance.[2]

In 2012, a primary care audit was commissioned by the Department of Health (DH) to determine the level of prescribing of antipsychotics in dementia patients.[3] This showed that Bedfordshire was the highest prescriber in the East of England region with a 10.2% prevalence of antipsychotic prescribing in patients with dementia in 2011, reduced from 19.8% in 2006. This was significantly higher than other CCGs within the region whose prevalence was 0-8% in 2011, reduced from 5-18% in 2006. The CCG with zero prevalence in 2011 brought into question the overall results, and it was noted that the data collected by the DH was part of a data extraction relying on accurate coding by practices. Therefore, the poor comparative results may partially reflect higher levels of accurate read coding in Bedfordshire. There were also low levels of participation from

each CCG. Bedfordshire practice participation was 22% and the lowest in the region was only 12%. Bedfordshire Clinical Commissioning Group (BCCG) Medicines Management Team (MMT) recognised that further work needed to be done and conducted an internal baseline audit in July 2013. This audit showed that 8.1% of dementia patients without mental health co-morbidities were being prescribed antipsychotics.

It was decided that, to achieve reductions in prescribing, there was a need to raise GP awareness of the level of prescribing in their own practices and identify reasons why excessive prescribing was occurring. To this end an audit was developed for GPs to conduct in practice. This was incentivised as part of the BCCG 2014-15 Prescribing Incentive Scheme (PIS). Practices had to complete the audit and submit it to the MMT with an action plan, then submit a re-audit seven months later. As BCCG were asking 55 practices to do this individually, a clear audit process was written to ensure consistency in methodology and reproducibility of the results.

In addition to collating data on prescribing from all practices, the aims were to improve the prescribing practice of antipsychotics for patients with dementia, reduce inappropriate use of antipsychotics in managing Behavioural and Psychological Symptoms of Dementia (BPSD), and increase monitoring and review when these were prescribed.

## Method

Practices were provided with a written audit process, including a search strategy, and a standardised data collection sheet. The data collection in phase one was to be completed and submitted over the four month period April-July 2014 with an action plan based on the results. The action plan was not based around a fixed structure to give individual practices the opportunity to identify different issues and different solutions. The action plan was submitted at this point to allow the practices time to put actions into practice before phase two. The second phase comprised a repeat data collection over January-February 2015 to show evidence of change.

Between the two audit phases the MMT prepared a report based on the findings of phase one to distribute to the practices. This shared the overall results and highlighted key issues for action. The action plans were also collated and summarised to share ideas for implementation and improvement between the practices for action before the re-audit. The audit was designed to be practice led so that prescribers could identify prescribing issues as they collected the data and devised the action plans and thereby recognise the need for improvement that they would then action. To encourage engagement for the entire process monies were only allocated by the PIS if data collection for both audit phases and an action plan were received by the deadlines.

The patient search criteria included all patients over 60 years of age prescribed an antipsychotic on current active repeat. This was to ensure that those patients with dementia but who had not been recorded on the register were not inadvertently excluded. Antipsychotics commonly prescribed for other indications (e.g. prochlorperazine) were excluded from the search. Patients under 60 years of age who were on the dementia register were also screened for prescribing of antipsychotics. As all GP practices used the same computer system the search was created and shared with all practices so that a unified process was followed.

The data collection form was completed for all eligible patients i.e. patients with dementia prescribed an antipsychotic. Those who were taking the antipsychotic for a mental health diagnosis but with no history of dementia were screened out and no further data collected.

Data collection at a practice level included the practice list size, the dementia list size and the total number of patients with dementia taking antipsychotics. At a patient level the drug details were recorded with information on initiation, indications, coding, residence, risk factors and review.

## Results

Across the five localities in BCCG there was a 100% response rate and 55 practices completed the data collection for phase one, representing a total population of nearly 445,000 patients. Phase two was completed by 50 of the practices. Of those who did not complete the audit four practices allowed MMT access to their clinical system to extract the data. This resulted in data for 98% of the BCCG practices and 99% of the population.

### *Overall*

Of the total CCG population 2544 (0.6%) were registered with dementia. At phase one 9% of patients with dementia were prescribed antipsychotics, reducing to 7.7% once concomitant psychoses were excluded. This reduced at phase two to 7% and 5.5% respectively, demonstrating a 21% reduction in antipsychotic prescribing in patients with dementia and a 32% reduction from baseline.

The majority of the patients were living in a Care Home (73%), but almost a quarter (24%) were still living in their own homes, with a small minority in sheltered accommodation. This remained the same for both phases of the audit.

### *Diagnosis*

72% of the patients with dementia who were prescribed antipsychotics were taking it solely for their BPSD. The remaining 28% also had co-morbidities of psychosis. This was constant for both phases of the audit.

In phase one, 6% of patients were taking antipsychotics for BPSD in dementia without being recorded on the dementia register. In phase two, those with a Read Coded diagnosis of dementia rose to 96%.

### *Drugs*

In phase one nearly a third of patients prescribed antipsychotics were prescribed quetiapine. Only a quarter were prescribed risperidone, the only antipsychotic licensed for use in dementia. Haloperidol and olanzapine were prescribed in 15% and 13% of patients respectively. The remainder of the drugs were prescribed infrequently. By phase two the proportion of quetiapine prescribed had reduced to 29% and risperidone had risen to 28% (Graph 1), however the numbers involved are very small.

Of those prescribed antipsychotics in phase one, 90% were prescribed the drug to be taken regularly, with 10% taking it

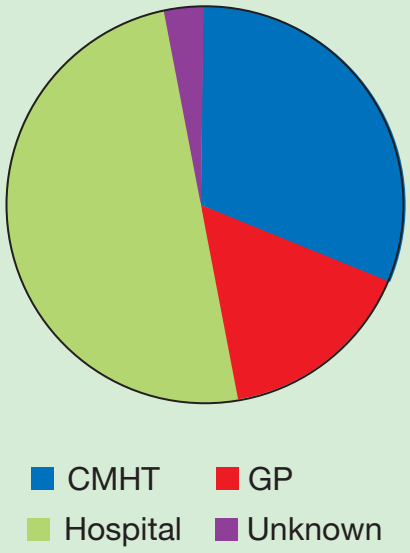
when required. Of the 'when required' dosages, 21% had not requested an issue within the last three months. By phase two the 'when required' prescriptions had reduced to 6% of the total, but the proportion who had not requested an issue in the last 3 months had doubled to 42%.

***Initiation***

The majority of antipsychotics were started by a hospital (47-53%) and 79-83% of initiations were made between secondary care and the Community Mental Health Trust (CMHT). GPs only initiated antipsychotics in 14-18% of cases (Graph 2).

Only just over half (54-55%) of patients in each phase of the audit had a documented treatment plan at initiation.

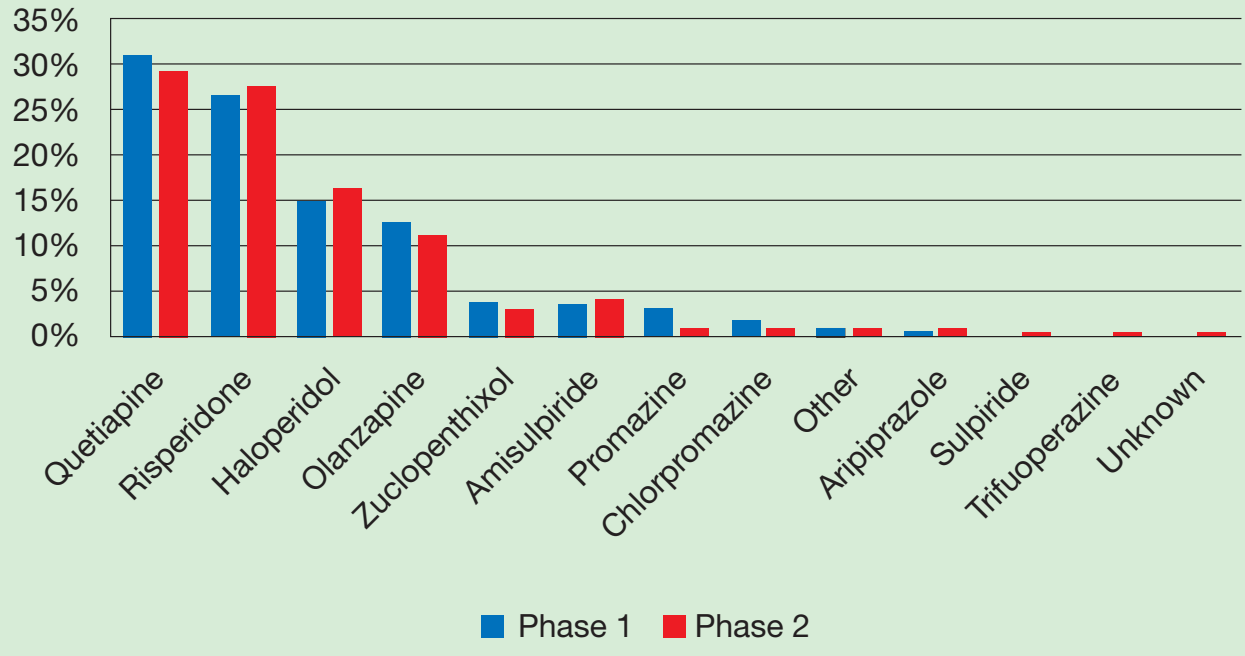
More than half of the patients prescribed antipsychotics had cardiovascular co-morbidities or risk factors. At phase one, three quarters of these had no documentation of a benefit/risk discussion in their records. The re-audit at phase two showed an 83% increase in patients with a documentation of risk/benefit discussions, but over half still did not have this documented (Table 1).




**Graph 2: The location of the clinician initiating the antipsychotic (phase 1)**

| CV comorbidity/ risk factors | Count (Phase 1) | Count (Phase 2) | Documentation of risk/ benefit discussion | Count (Phase 1) | Count (Phase 2) |
|---|---|---|---|---|---|
| Yes | 138 (58%) | 115 (56%) | Yes | 33 (24%) | 51 (44%) |
| No | 92 (39%) | 85 (41%) | No | 104 (75%) | 61 (53%) |
| Unknown | 6 (3%) | 7 (3%) | Unknown | 1 (1%) | 3 (3%) |

**Table 1: Number of patients with a cardiovascular comorbidity/risk factor and of those the number with a documented risk/benefit discussion**




**Graph 1: The antipsychotic drugs prescribed to treat BPSD at Phase 1 and Phase 2 of the audit**

The greatest improvement in documentation of risk/benefit discussions was in the GP initiations. These had the lowest recorded documentation at phase one, but the proportion had almost tripled by phase two (Table 2).

***Review***

Of those who answered the question, only half had had a review of their medication within the last three months in phase one of the audit. This increased by 43% at phase two, but almost a third of patients were still not receiving three monthly reviews as recommended by NICE.[2]

***Duration***

Almost half of the patients prescribed antipsychotics had been taking them for more than two years (Graph 3). The duration of prescribing did not change considerably between the two phases. An increase in the proportion of longer durations was seen in phase two, with a concomitant reduction in shorter durations of less than three months, however the numbers involved are small.

Longer durations of therapy were seen for patients who had their treatment initiated in secondary care (Table 3). The majority of patients initiated on antipsychotics by CMHT had been treated for more than 2 years (65%), as had those initiated by a hospital (47%). Conversely, the majority of those initiated by their GP had been treated for less than a year (43%).

***Overall***

The overall results across the baseline audit and two phases of the PIS audit show a reduction in prescribing, and an increase in diagnosis and review. However, the duration of therapy has increased over the two year period. The direct comparison between the three audits can be seen in table 4.

***Action Plans***

The quality of the Action Plans received from practices was variable. Some made some very cognisant points for the practice to act on and suggestions at a CCG level that have been taken forward.

## Discussion

Within the CCG there is no shared care agreement for prescribing antipsychotics. GPs often make referrals to the mental health service for management of difficult patients, however those GPs who choose to prescribe themselves can do so. Once an antipsychotic has been initiated by secondary care, patients are often discharged back to GPs for continuation of care. Therefore, although antipsychotics can be initiated by either primary or secondary care, the ongoing management is usually the responsibility of the registered GP.

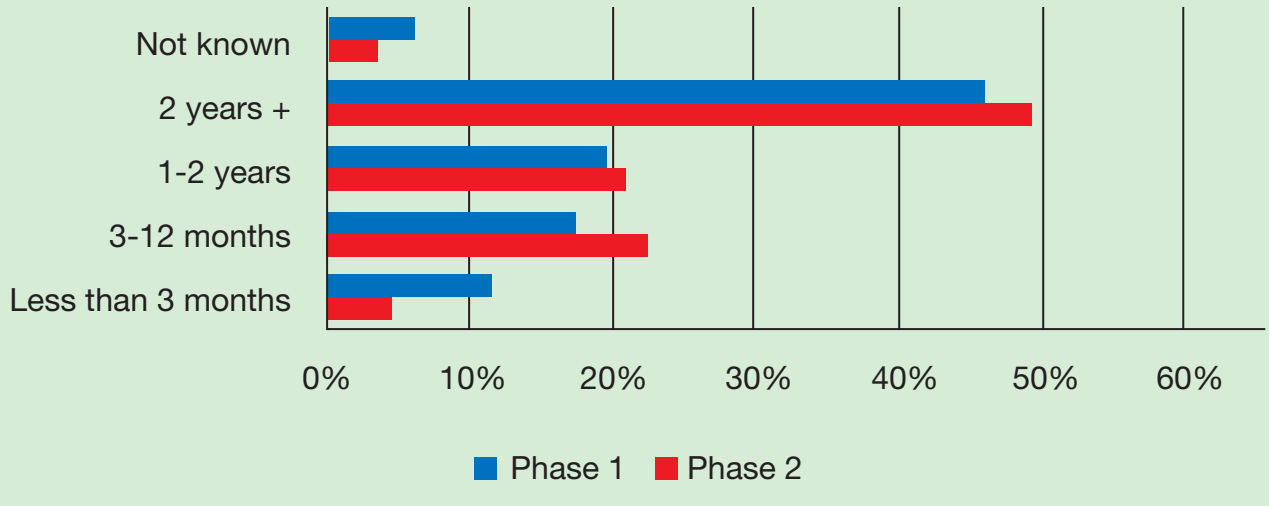
The 100% response rate for phase one of the audit showed a strong engagement from the practices. Unfortunately, this dropped marginally for the second phase but the MMT were able to access practices to obtain the majority of the data. As 55 practices individually collected their own data this may have led to variability in the results, however the audit and data

| | Phase 1 | Phase 2 |
|---|---|---|
| CMHT | 21% | 34% |
| GP | 17% | 50% |
| Hospital | 28% | 52% |

**Table 2: Documentation of risk/benefit discussion by location of initiating clinician**

| | CMHT | Hospital | GP |
|---|---|---|---|
| < 3 months | 5% | 3% | 8% |
| 3-12 months | 12% | 24% | 35% |
| 1-2 years | 14% | 23% | 30% |
| 2 years + | 65% | 47% | 27% |
| Unknown | 5% | 2% | 0% |
| | 100% | 100% | 100% |

**Table 3: The duration of therapy of antipsychotics by where they were initiated**




**Graph 3: The duration of antipsychotic prescribing at Phase 1 and Phase 2**

| Outcome | 2013 (baseline) | 2014 (Phase 1) | 2015 (Phase 2) | Improvement? |
|---|---|---|---|---|
| Response rate | 67% | 100% | 98% | ✓ |
| Patients on dementia register prescribed antipsychotic | 11.2% | 9.3% | 7.7% | ✓ |
| Patients on dementia register prescribed an antipsychotic, without psychosis diagnosis | 8.1% | 7% | 5.5% | ✓ |
| Dementia Read Coded | 85% | 94% | 96% | ✓ |
| **Residence** | | | | |
| Care Home | 70% | 73% | 73% | |
| Own Home | 29% | 24% | 23% | |
| Sheltered | 0.6% | 2% | 3% | |
| **Drugs used** | | | | |
| Quetiapine | 36% | 31% | 29% | ✓ |
| Risperidone | 22% | 26% | 28% | ✓ |
| Haloperidol | 12% | 15% | 16% | |
| Olanzapine | 9% | 13% | 12% | |
| Other | 21% | 15% | 15% | |
| **Drug details** | | | | |
| Regular dosage | 94% | 90% | 94% | |
| When required dosage | 6% | 10% | 6% | |
| Initiations by primary care | 18% | 14% | 18% | |
| Initiations by secondary care | 68% | 84% | 79% | |
| Documented treatment plan at initiation | - | 55% | 54% | |
| Cardiovascular co-morbidity | 39% | 58% | 56% | |
| Risk / benefit discussion documented | - | 24% | 44% | ✓ |
| 3-monthly review | 59%* | 47% | 67% | ✓ |
| **Duration of therapy** | | | | |
| Less than 3 months | 9.3% | 11% | 4% | |
| 3-12 months | 24.7% | 17% | 22% | |
| 1-2 years | 17.6% | 19% | 21% | ✘ |
| 2 years + | 37.4% | 46% | 49% | ✘ |
| Not known | 11% | 6% | 3% | |

*includes patients who have had contact with secondary care assumed reviewed

**Table 4: A comparison of results across the audit phases**

collection form were designed to minimise this risk. The search parameters were clearly written and distributed to the practices with the audit process, although it cannot be guaranteed how rigorously these were followed. The data collection sheet was an Excel spreadsheet with drop down menus in the boxes to ensure consistency in data collection across all practices.

There was a reduction in antipsychotic prescribing of 32% from the 2013 baseline audit to phase two of the PIS audit. This is a substantial reduction and demonstrates the ongoing work that has been done in reducing the inappropriate initiation and increasing the review and cessation. However, not all prescriptions will continue to be appropriate long-term and ongoing vigilance is needed to review and assess all patients prescribed these drugs. There needs to be more consideration of alternative non-pharmacological strategies and closer links with services which provide support, in line with NICE Guidance,[2] to continue this reduction in prescribing.

Although 28% of patients with dementia were taking the antipsychotic with concomitant mental health problems, the majority were prescribed the drug for BPSD only. The proportion of those without their dementia Read Coded reduced from 15% at the baseline audit to 4% at phase two. This is a positive increase in recording of diagnosis and needs to be maintained to ensure patients are able to access all care provision and support for dementia. The future aim would be to achieve 100% recording of diagnosis and practices need to ensure accurate Read Coding, especially following secondary care communications.

Almost three quarters of patients identified were living in a care home. Antipsychotics have been recognised as over-prescribed in this setting.[1] Although those patients with greater needs are more likely to be living in a care home, which would increase the prescribing rate, it is not known whether the frequency of prescribing is due to clinical indication or pressure from care staff as a means of responding to difficult to manage patients. It is therefore important for prescribers to ensure that they make a full assessment of symptoms before initiating, especially as up to half of all episodes may resolve without intervention.[1] It is also important to regularly review antipsychotics prescribed in the care home setting for ongoing appropriateness and discuss alternative strategies with patients and carers. Long term use must be challenged and justified, particularly as 70% of patients do not experience deterioration of symptoms with cessation of these drugs.[4]

The only antipsychotic licensed for use in dementia is risperidone, for a maximum of six weeks,[5] as the evidence for the benefits versus risks of other antipsychotics in BPSD are not substantiated. However, the most frequently prescribed antipsychotic across all phases was quetiapine. By phase two of the audit this balance was beginning to be redressed with quetiapine and risperidone prescribing rates almost equal, showing an increased tendency towards prescribing to license. However, 72% of antipsychotic drugs were being used outside of license. Prescribers need to ensure that they practice in line with licensed indications and the evidence base where possible.

Only just over half of patients had a documented treatment plan at initiation. As the majority of initiations were by secondary care or CMHT, who usually then discharge patients to GP care, the lack of an action plan would mean that GPs would be unaware of treatment targets and review options. When antipsychotics were initiated by secondary care clinicians it was found that following discharge GPs are less likely to review, reduce or stop the antipsychotics. Improvement cannot be assessed without a record of symptoms and treatment targets at initiation. Furthermore, when patients are discharged GPs cannot review in line with consultant treatment aims if these are not recorded, leading to a decrease in reviews and an increase in extensive durations of treatment.

Between the two phases of the audit the MMT discussed this with the CMHT provider and both of the main secondary care providers. A one page summary of relevant results were presented at the Medicines Management meeting and Drugs and Therapeutics Committees respectively. These were presented with recommendation to prescribers that at the point of discharge a brief action plan should be communicated to the patient's GP in writing. This should include symptoms, treatment aims, potential points for dose reduction and cessation of therapy, and also document whether a cardiovascular risk discussion has occurred. This recommendation was well received by prescribers at the meetings. There was no movement in this target between the two audit phases as the majority of prescribing is historic; this will need to be reassessed specifically for new initiations.

Although more than half of the patients prescribed antipsychotics had cardiovascular co-morbidities or cerebrovascular risk factors, at phase one only a quarter of these had documentation of a benefit/risk discussion in their records. It is not known whether this represents a lack of risk assessment or an omission to document it. As the data was obtained by review of primary care records if this had been undertaken in secondary care but not recorded in any of the communications it would not have been identified. Documentation of risks and evidence of adequate discussion with patient and carer at the point of initiation was recommended by the MHRA in 2009.[6] The re-audit at phase two showed an improved assessment of risk/benefit discussions, but over half still did not have this documented. The greatest improvement in documentation was in those initiated by the GPs themselves showing that their practice was improving as a result of the audit. This is an area for ongoing improvement.

Only half of patients received a three monthly review at phase one, and although this improved at phase two a third were still not receiving the necessary reviews of therapy. Of the few patients prescribed the antipsychotics 'when required', the high proportion of these not issued in the last three months indicates missed opportunities for review and cessation, which are likely to extend across all prescriptions. The lack of reviews would contribute to the long durations of therapy seen. Almost half of the patients prescribed antipsychotics had been prescribed them for more than two years. This was the case regardless of whether or not there was a concomitant psychosis indication. The earliest initiation, without a psychosis co-morbidity, was 2001. It is important for GPs to review the ongoing need for antipsychotics as dementia and the behavioural and psychological symptoms do change over time.

The duration of prescribing did not change considerably between the two phases. An increase in the proportion of

longer durations was seen in phase two, with a concomitant reduction in shorter durations of less than three months. This gives the impression that GPs were more confident reviewing and stopping antipsychotics after short periods of time than in patients who have been taking them for considerably longer. However, the numbers involved are small and indicate that long durations of prescribing were problematic and reviews need to be undertaken. The only antipsychotic licensed for use in dementia is licensed for six weeks. The increase in duration of prescribing is concerning and could result in an increase in overall antipsychotic prescribing. GPs should work with carers to reduce reliance on antipsychotics and recognise that their use should be challenged. Regular reviews are essential when the ongoing risk/benefit, treatment plan, need and dosage should all be reviewed. A written action plan at initiation should assist with this.

As a result of the suggestions from GP practices in the action plans, MMT have produced 'Antipsychotic in dementia' templates for the SystmOne GP computer system to be used at both initiation and review. These are evidence-based and include support with initiation, review, reduction and cessation. These can be accessed by all BCCG practices. They are designed to support GPs in their decision making and empower them to review and stop the antipsychotics where appropriate.

## Conclusion

Work has been done across BCCG to successfully reduce the frequency of antipsychotic prescribing in dementia patients in line with recommendations. Prescribing for patients with dementia with no concomitant psychoses has now reduced by 32% from baseline. The proportion of reviews increased by 43% between audit phases one and two. Patients with dementia are less likely to have antipsychotics initiated and, when this is done, they are more likely to have them reviewed and stopped. This will potentially lead to reduced strokes and other adverse events, thereby improving quality of life and potentially reduce all-cause mortality.

However, a lack of reviews and increasing durations of therapy are putting this work at risk. The ongoing durations of treatment without cessation will inevitably lead to an increase in overall prescribing. Having achieved the 5.5% prevalence of antipsychotic prescribing in dementia patients, vigilance needs to be maintained to review patients and ensure that ongoing prescribing is appropriate. Treatment should be challenged at each review to assess ongoing need.

### Declaration of interests

The authors have nothing to disclose.

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