

*Patient views about polypharmacy medication review clinics run by clinical pharmacists in GP practices*

Article

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## 1 **Introduction**

2 ‘The prescribing of multiple medicines inappropriately, or where the intended benefit of the  
3 medicines are not realised’ is known as problematic polypharmacy [1]. Polypharmacy can  
4 decrease medication adherence and increase the incidence of adverse drug reactions (ADRs)  
5 and drug-drug interactions, resulting in falls, hospitalisations and other complications  
6 especially in the elderly [2]. Medication-related problems of polypharmacy can be prevented  
7 through patient-centred medication reviews [1]. There is some evidence that pharmacist-led  
8 polypharmacy services for older people reduce inappropriate prescribing internationally [3].  
9 However, there is a perception that the majority of research in this area has been completed  
10 without examining patients’ viewpoints [1]. One qualitative study conducted with patients to  
11 gather views about pharmacist-run medication review clinics in general practice found wide-  
12 ranging views that were themed by the authors according to patient perceptions before the  
13 reviews and then their experiences of attending [4].

14 Patient involvement in decisions about medication use is fundamental in polypharmacy. For  
15 example, there is conflicting evidence on patients’ willingness to accept prescriber decisions  
16 to de-prescribe [5] and doctors worry about patients’ unwillingness to stop longstanding  
17 medications [6]. Patient feedback about polypharmacy medication reviews is arguably a key  
18 indicator of the success of such services. Alongside this, the NHS in England has been  
19 working with the Royal Pharmaceutical Society (RPS) on a three-year pilot to test the role of  
20 clinical pharmacists within General Practice (GP) surgeries [7]. There is a gap in the  
21 literature in relation to outcomes associated with pharmacist-led medication reviews  
22 conducted within GP practices in England, specifically patients’ perception of such services.

## 23 **Aim of the study**

24 The aim of this study was to investigate patient views about a patient-centred clinical  
25 pharmacist-led polypharmacy medication review service completed within GP practices with  
26 those  $\geq 75$  years of age and prescribed  $\geq 15$  medications.

## 27 **Ethics approval**

28 Ethical approval was granted by the University's Research Ethics procedures (School of  
29 Food, Chemistry and Pharmacy Ethics Review Committee) in January 2016.

## 30 **Methods**

### 31 **The patient-centred pharmacist-led polypharmacy medication review service**

32 There were 819 patients (0.39% to 2.99% of patients registered with each practice) who were  
33  $\geq 75$  years of age and prescribed  $\geq 15$  medications (excluding palliative care cases and those in  
34 registered care homes) in the 34 GP practices in Windsor, Ascot & Maidenhead (in south east  
35 England); more than half (56%) were female. The highest percentage of patients taking  $\geq 15$   
36 medicines was in the 70-79 year old age band (28%). All 819 patients were invited via a letter  
37 to a pharmacist-led medication review at 17 GP practices in Windsor, Ascot & Maidenhead  
38 between April 2015 and March 2016.

39 Reviews were completed by one of four pharmacist independent prescribers employed by  
40 Clinical Commissioning Groups (CCGs) as prescribing support clinical pharmacists. The  
41 reviews drew on the principles of patient-centred care, medicines optimisation in  
42 polypharmacy [1], and other good-practice guidelines [8] with direct access to the medical  
43 record and in discussion with the patient. Medication changes were enacted directly on  
44 electronic systems by the pharmacist independent prescribers. The main intervention element

45 was prescription changes as well as patient education and signposting. A record of all  
46 changes and recommendations, reasons for changes and projected annual cost savings were  
47 made contemporaneously and are described below.

48 A total of 415 consultations (with 415 different patients) were completed (51% attendance  
49 rate) in 17 GP practices, resulting in a total of 901 medication-related changes. The changes  
50 involved stopping a medication, adding a medication, decreasing a dose, and increasing a  
51 dose. The reasons for changes were documented and categorised as relating to prescribing  
52 quality (improving clinical management or preventing harm from the medication), patient  
53 reported side-effects and formulary recommendations. Some example and reasons for  
54 common changes made included stopping an anticholinergic to reduce the risk of adverse  
55 drug reactions; starting medication for prevention of osteoporotic fractures; adjusting the  
56 dose or time of furosemide to reduce adverse drug reactions; up titration of ACE inhibitor  
57 dose in heart failure to reduce morbidity. Pharmacists also signposted patients to other  
58 services such as a falls clinic or talking therapies. A net saving of around £37,000 per annum  
59 (£90 / patient) was predicted based on the prescribing changes, with -£46,000 as cost savings  
60 and +£9,000 as additional spends on medication.

### 61 **Data collection and analysis**

62 A patient feedback questionnaire was constructed and face validated with two pharmacists  
63 then posted by a CCG pharmacist to all patients who had taken part in the service within  
64 three months of attending. CCGs are clinically-led health bodies responsible for the planning  
65 and commissioning of health care services for local areas in England. There are 209 CCGs in  
66 England and this study covered three CCGs. Data from returned questionnaires were  
67 transferred to SPSS (v21) and analysed using descriptive statistics. Qualitative patient  
68 comments were analysed using thematic analysis meaning data were examined, coded, and  
69 themed for important ideas that related to the research question [9].

## 70 **Results**

### 71 **Patient views**

72 Completed questionnaires were returned by 166 patients resulting in a 40% response rate.

73 The majority (n=138; 83%) found the service helpful, 21 (13%) did not, 4 (2%) did not know

74 and 3 (2%) did not respond. The concerns of 50 (94%) of the 53 people who indicated they

75 had a concern about their medications before their appointment were addressed, but for 2

76 (4%) these were not and 1 (2%) did not know. Overall 132 (80%) indicated that they

77 understood their medicines better since the pharmacist review, 21 (13%) did not, 8 (5%) did

78 not know and 5 (3%) did not respond. Finally, 138 (83%) people were likely or extremely

79 likely to recommend the GP surgery to friends and family if they needed similar care or

80 treatment; 8 (5%) were neither likely nor unlikely, 9 (5%) were unlikely or extremely

81 unlikely and 11 (7%) were unsure. Table 1 outlines the main themes derived from analysis of

82 qualitative responses. A small number of negative comments stated the service was not useful

83 especially for non-English speaking patients and for those with impaired cognition.

### 84 **Discussion**

85 The feedback received from patients about the patient-centred pharmacist-led polypharmacy

86 medication reviews indicated that the majority found these helpful, most understood their

87 medicines better since the review, and almost all who had concerns about their medication

88 beforehand felt these were addressed. Qualitatively, patients appreciated pharmacists'

89 personal approach, advice and explanation, listening skills and ability to address their

90 concerns; patients expressed satisfaction with the service and some felt it increased their

91 confidence and knowledge of their medication.

92 The strengths of this study are that it reports on an area of activity where there is a distinct

93 lack of published research. It reports on patient views about medication reviews completed by

94 pharmacists working within GP practices. Patients were broadly happy with the service and  
95 seeing that the service in the main involved changes being made to patient prescriptions, the  
96 paper supports the idea that pharmacist-led prescribing decisions, including de-prescribing  
97 decisions, are acceptable to patients. This is important because patients' willingness to accept  
98 prescribing decisions is key to the long-term success of medication reviews.

99 The patient feedback questionnaire was validated with two pharmacists only. In addition,  
100 only 51% of those invited actually attended a review and of these only 40% returned a  
101 completed patient feedback questionnaire. Therefore there is a cohort of patients not  
102 represented by this study. In addition, this study did not measure views in the longer term.

103 The Department of Health in England is proposing to restructure the provision of community  
104 pharmacy services with a focus on clinical services that are better integrated with primary  
105 care [10]. Studies such as the current one add to the evidence base to support a shift towards  
106 the employment of clinical pharmacists within GP practices, at least as far as short-term  
107 patient views are concerned. Future research should examine the longer-term effects of  
108 pharmacist interventions on health outcomes such as hospital admissions.

## 109 **Conclusion**

110 The majority of patients who participated in a patient-centred pharmacist-led polypharmacy  
111 medication review service within GP practices in Windsor, Ascot & Maidenhead, which had  
112 resulted in numerous changes to patients' medication, expressed positive views about the  
113 service. Further research is needed to investigate clinical outcomes associated with such  
114 reviews.

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121 **Conflicts of interest**

122 The authors declare that they have no conflict of interest.

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164 **Table 1.** Themes derived from patient comments about the pharmacist-led polypharmacy  
 165 medication reviews

Main theme and sub-themes	Examples
<b>Process</b>	
The pharmacist’s personal approach	<i>“Found someone kind that cares about me.” (P133)</i>
Being listened to	<i>“Made me feel as if they were listening to my concerns about my medications.” (P115)</i> <i>“Had time to talk and didn't rush me at all.” (P112)</i>
The pharmacist’s advice and explanations	<i>“Thank you [pharmacists name] for your clear and concise explanation of my medication.” (P144)</i> <i>“The pharmacist explained everything properly and I felt they understood me.” (P66)</i>
Questions or concerns being answered	<i>“This review I found very helpful and all my questions were answered more than adequately.” (P1)</i> <i>“I thought there were perhaps some side effects from my medication that I currently take, so good discussion.” (P107)</i>
<b>Outcome</b>	
Increased confidence or knowledge about medication	<i>“More confident getting medicines right.” (P4)</i> <i>“Elderly people tend to take their meds not really knowing what it is for and how it works. I personally learnt quite a bit by seeing the pharmacist. Overall experience was very valuable for me.” (P30)</i>
General satisfaction with the service	<i>“Feels privileged to have had this appointment.” (P122)</i> <i>“Enlightenment. This service is tantamount to a ‘second opinion’, very helpful and puts your mind to rest.” (P18)</i>