PSNC Briefing 038/17: A summary of literature relating to Medicines Use Reviews

This PSNC Briefing provides a summary of the key literature on the Medicines Use Review (MUR) service identified by PSNC. This work was undertaken to support PSNC’s development of community pharmacy medicines optimisation services, but it is being published as it may be of interest or use to Local Pharmaceutical Committees (LPC) and pharmacy contractors.

Introduction

The MUR is a structured review that is undertaken by a community pharmacist to help patients manage their medicines more effectively. During an MUR, the pharmacist reviews the patient’s use of their medicines, ensures they understand how their medicines should be used and why they have been prescribed. The pharmacist will also identify medication problems and will then provide feedback to the prescriber, if appropriate. An MUR aims to improve a patient’s understanding of their medicines, to highlight problematic side effects and to propose solutions, when necessary. They also seek to improve adherence and reduce medicines wastage.¹

MURs are nationally commissioned as an Advanced Service by NHS England (the service is also commissioned in Wales, but there are differences in the service requirements compared to England, e.g. target groups). Initially, three target groups for MURs were introduced in October 2011. In September 2014, a fourth target group, cardiovascular risk, was agreed and took effect from 1st January 2015. The national groups are:

1. patients taking high risk medicines;
2. patients recently discharged from hospital who had changes made to their medicines during their hospital stay;
3. patients with respiratory disease; and
4. patients at risk of or diagnosed with cardiovascular disease and regularly being prescribed at least four medicines.

From 1st April 2015, community pharmacy contractors must carry out at least 70% (previously this was 50%) of their MURs within any given financial year on patients in one or more of the target groups outlined above². The maximum number of MURs for which a pharmacy will be paid in any year is 400.³

In 2015/2016, a total of 3,313,309 MURs were conducted by contractors in England. 94.4% of community pharmacies were providing the service, with an average of 300 MURs undertaken per pharmacy⁴.

¹ PSNC website. What is the Medicines Use Review & Prescription Intervention Service? (accessed 19/6/17)
² PSNC website. National target groups for MURs (accessed 19/6/17)
³ PSNC website. Advanced Service payments (accessed 19/6/17)
Clinical effectiveness of MURs

In a matched cohort study, MURs were conducted in eight community pharmacies in Kent. At baseline, 120 patients received an MUR. At six-month follow-up, the same patients received a repeat MUR and in addition, a control group (n=120) received an MUR. There was a 64% reduction in clinical drug-related problems in the group that had received a baseline MUR compared to a 3% reduction to the control group (their MURs were compared to patients’ records dating six months earlier).

A community pharmacist from Great Yarmouth and Waveney tracked a sample of MURs he had completed. He found that in 56 out of 100 MURs, his recommendations had been taken up by GPs. The rest of the recommendations were either not followed by GPs or no information was available (22 were endorsed ‘no further action necessary’).

Promising outcome results have also been achieved by collaborative projects between healthcare providers which have included pharmacists conducting MURs.

Coronary heart disease

In a study of MURs targeted to patients with coronary heart disease, 294 MURs resulted in 396 recommendations on prescribed medication. After three months, 56% of the recommendations appeared to have been acted upon by the GPs. The recommendations most often taken up were to start (70%) or stop (68%) a medicine and the least implemented one was to restart previous medication (27%).

Depression

In Bristol, pharmacists offered targeted MURs to patients taking antidepressants that aim to support patients who are taking these medicines to identify side effects, whether they have good adherence and their alcohol intake. This generated 11 GP referrals from 145 MURs in the first 10 weeks due to side effects or adherence problems. It was also identified that only 32% of patients taking antidepressants had received printed information from their GP.

Falls and fractures

A Falls and Fracture Prevention MUR Service was developed and piloted at a Weldricks Pharmacy in Doncaster where trained pharmacists provided a targeted standard MUR with additional falls and osteoporosis risk assessment and prevention elements. The results indicate there is a role for community pharmacists in falls and fracture prevention: 27 out of 28 patients reviewed were taking one or more ‘high-risk’ medicines; 11 were experiencing fall-inducing side effects; 13 had fallen in the past year; and 21 were identified as at risk of falls. The most common risk factors identified were: a recent fall, ‘high-risk’ medication prescribed and potentially fall-inducing side effects. Sixteen patients were referred to their GP, five had their medication changed, two were found to have postural hypotension and three were referred to secondary care. Patients expressed a high level of satisfaction with the service and the skills of the pharmacist.

Non-prescribed medicines

MURs can also provide a useful opportunity for community pharmacists to review non-prescribed products. Even if
not taken regularly, the use of some non-prescribed products may need to be addressed and so occasional as well as regular use of such products needs exploration.  

**NSAIDs**

Livingstone et al evaluated a study conducted by a local commissioning group which trialled pharmacy MUR services for patients taking non-steroidal anti-inflammatory drugs (NSAIDs). The study included 17 pharmacies and 142 patients. It was found that 86 of those patients did not have adequate gastrointestinal prophylaxis. As a result of the MUR, patients either had a prophylactic medicine initiated, NSAID treatment discontinued or NSAID treatment dose reduced.  

**Parkinson’s disease**

Often, patients with Parkinson’s disease do not seek help when their condition deteriorates and even if they do so, GPs tend to refer them to a specialist. The referral pathway can take a considerable time, which allows the condition to worsen. Therefore, the use of MURs as a tool to improve the management of patients with Parkinson’s disease in primary care was examined in Salford.  

The project was carried out as a collaboration between pharmacy staff, GPs and the specialist unit at Salford Royal Hospital. Patients identified by their Patient Medication Record (PMR) in the eight participating pharmacies were offered an MUR which incorporated five additional questions to assess the level of control of the disease. Potential outcomes of the MURs were: no action was taken; referral to seek advice from the specialist unit; or the patient was immediately referred to the unit. GPs were notified about any action taken and were provided with a copy of the MUR form.  

During the project, 53 MURs were conducted, 16 of which were to patients in the domiciliary setting. Eighteen were referred to the specialist hospital unit (seven of them were domiciliary patients). A third of the patients had a poorly controlled condition. The collaborative project improved patient care due to early referral by the pharmacists and consequent resolution of the problems leading to better management of the disease. According to a patient survey conducted by Parkinson’s UK, patients found the service helpful and some were keen to use it again.  

**Post-discharge**

Post-discharge MURs can contribute significantly towards lowering the rates of hospital re-admissions. The ‘Transfer of Care’ project set up by Newcastle-upon-Tyne Hospitals NHS Foundation Trust and North of Tyne Local Pharmaceutical Committee (LPC) was launched in two hospitals and 211 local pharmacies in 2014. The project involved referring hospital patients to community pharmacies for post-discharge MURs. Since its launch, 1,189 patients have been referred for an MUR. A formative service evaluation found that hospital pharmacy staff were able to use an information technology (IT) platform to improve the coordination of care for patients transitioning back home from hospital. Community pharmacists were able to contact the majority of patients and results indicate that patients receiving a follow-up consultation from the community pharmacist may have lower rates of readmission and shorter hospital stays.  

Another post-discharge MUR project was launched involving South Staffordshire Primary Care Trust and Mid Staffordshire NHS Foundation Trust in 2009. As a result, 69 MURs were conducted in patients’ homes. The project

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resulted in an 81% improvement in measures of functional independence as well as saving the Trusts £413,819 during the first year.¹⁹

Pre-discharge
Pre-discharge MURs, although not a national target group, can still bring benefits to a patient. The Medway Maritime Hospital in Gillingham now advises all patients due for an elective surgical procedure to have an MUR with their community pharmacist before attending their appointment to provide clinic staff with an accurate medication history.²⁰

Respiratory disease
A six-month targeted MUR initiative was set up across 100 branches of a pharmacy chain in South Wales and the South West of England in 2008. Patients presenting prescriptions for inhalers were invited to complete an Asthma Control Test (ACT). If their score indicated poor control of their condition, they were invited to undergo an MUR. Over 3,300 people were tested, and over 2,300 received an MUR. Of the 219 patients followed up after the MUR, 74% showed an improvement in the control of their symptoms.²¹

Prescribing of asthma medication and asthma-related emergency admissions has declined considerably after the introduction of MURs involving assessment of patients’ inhaler technique on the Isle of Wight.²² Initially, the training for inhaler technique was targeted to community pharmacists carrying out MURs. However, due to good feedback from patients and health professionals and a very rapid decrease in prescribing of reliever medicines, training was rolled out across primary and secondary care including, GPs, respiratory nurses, community matrons, and, hospital, prison and care home staff. Training consisted of information on how to measure a patient’s ability to use their inhaler device and the use of a training device. The participants’ ability to use a variety of inhaler devices was assessed and all of them were able to demonstrate competency by the end of the training. As the project evolved over time, it is not possible to attribute its outcome results to any specific element, but rather to the joint efforts of the healthcare professionals involved, including the community pharmacists providing MURs.

The Isle of Wight extended their MUR service offering the service to children as part of a unique pilot in 2008. Ten community pharmacies were involved along with 50 paediatric patients. The service was an overall success and concluded that minor patient groups should be invited to receive an MUR provided they are accompanied by a carer who consents on their behalf.²³

Another project in South Yorkshire aimed to help patients to optimise the use of their inhaled medication, improve respiratory management to avoid respiratory admissions, deaths and prescribing costs. The findings of the project show that most people were not in the optimum inspiratory range for their inhaler devices at first but pharmacist-led interventions brought over 1,000 people into the range after one consultation.²⁴

In Greater Manchester, a project²⁵ was coordinated across seven areas for pharmacists to provide enhanced MURs to patients using inhalers for asthma or chronic obstructive pulmonary disease (COPD). In the project, patients were offered three consultations over a six-month period which allowed pharmacists to conduct two MURs during that time. Users reported increased understanding and confidence about their inhalers and their condition. Approximately 20% of users in the survey reported making fewer GP or practice nurse visits; 10% reported fewer

²⁰ Malson, G. 2009. MURs with a twist: tweaking the format to achieve specific targets. Pharmaceutical Journal, 283:211
²¹ Anonym 2009. Effectiveness of medicines use reviews in asthma. Pharmaceutical Journal 283: 11
²³ Holden, M. 2009. Isle of Wight Community Pharmacy Paediatric Asthma Medicines Use Review Project
²⁴ Report of the South Yorkshire & Bassetlaw Community Pharmacy Respiratory Project (Sep 2013)
emergency admissions to hospital. Over half of user survey respondents reported an increase in their self-rated quality of life since using the service.

In, what is thought to be, the first study evaluating changes in symptom control of asthma following an MUR, over 60 patients were interviewed by telephone.26 The proportion of patients with their condition ‘under control’ or ‘reasonably controlled’ increased and accordingly, the percentage of those whose condition was ‘not controlled’ decreased. Moreover, over 90% of the patients rated the service as ‘very good’ (73%) or ‘good’ (21%). The findings suggest that MUR shows promise as an intervention to improve the control of asthma and is well accepted by this patient group.

The Cambridge Consortium evaluated the outcomes of an Inhaler Technique Improvement Project that was undertaken across the South Central region in the period 2011/12. In relative terms, 40% of asthma patients showed better asthma control over the time period; 55% of COPD patients showed an improvement in symptom management. From the start of the project in April 2011, over four thousand asthma-focussed MURs were conducted and almost 600 2nd (‘follow up’) asthma-focussed MURs were completed; 828 COPD-focussed MURs and follow up consultations were conducted.27

A cluster randomised control trial to evaluate the effectiveness and cost-effectiveness of a medicines use review service for asthma patients conducted in Italian pharmacies, which was based on the English MUR service, found that the community pharmacists identified 1256 issues with the patients’ medicines (mean 1.54/patient), mostly the need for education, monitoring and potentially ineffective therapy. Adherence improved by 35.4% 3 months post-intervention and 40% at 6 months and the probability of the intervention being more cost-effective than usual care was 100% at 9 months. The service has since been implemented as the first community pharmacy cognitive service in Italy.28

Domiciliary MURs

Many patients are unable to physically travel to their local pharmacy for many reasons. Such patients are at risk of isolation as they may not have any face to face contact with healthcare professionals. These housebound patients should not be denied an opportunity to benefit from a MUR with their pharmacist. Therefore, pharmacists are able to conduct offsite MURs at patients’ homes provided their local NHS England team agrees for them to do so.

A domiciliary MUR six-month pilot service in Croydon in 2012 is estimated to have avoided 52 emergency hospital admissions, saving £183,400 in total.29

A project undertaken within South Staffordshire Clinical Commissioning Group (CCG) aimed to bridge the interface between secondary and primary care.30 Accredited pharmacists carried out domiciliary MURs for older patients recently discharged from community beds in secondary care. The project, of which the MUR was a part, resulted in fewer admissions to A&E and fewer readmissions within 28 days of discharge from hospital. The communication pathway between healthcare professionals worked towards seamless care and transfer of accurate discharge information that was combined with patient education.

**MURs increase knowledge, can improve adherence and are considered valuable**

According to patient surveys, most patients reported that after an MUR they knew more about their condition,
understood more about their medicines and side effects, and learned how to take them safely and efficiently.31, 32, 33, 34, 35, 36

Annual results of a patient survey within a national audit of the MUR service were based on 2,667 submissions from 235 pharmacies across nine Primary Care Organisations (PCOs).33 Of the patients receiving an MUR, 66.5% had at least one long-term condition and 51.5% were taking multiple medicines. During the MURs, 95.5% of patients were given an opportunity to ask questions, 95.1% of whom felt they were answered satisfactorily. During 78.3% of the MURs recommendations were made to the patients and 90.5% of patients who were recommended to change the way they use or take their medications said they were likely to make these changes. The knowledge about their medicines and how to take and use them was improved in 78.5% of the respondents. Moreover, 83.7% of patients found the MUR to have been useful, with 54.2% saying it was very useful.

According to a national MUR audit, almost 61% of GPs (out of 185) found MURs useful, the main benefits identified being increasing patient safety (67.3%), improvements in patient’s understanding of their medicines (86.9%), in patients’ compliance with medicines regimen (75.7%) and in concordance by giving them the opportunity to play an active role in decision regarding their condition or treatment (51.4%).33

Satisfaction of patients that had received an asthma MUR at 46 pharmacies in the area of Hampshire and Isle of Wight LPC in 2007 was measured using a questionnaire. Feedback was received from 230 patients, one-fifth of whom used the service to seek specific advice and a third wanted to gain more confidence about their treatment. The majority of patients found the advice given useful (98%), most understood more about their medication (91%) and knew more about their condition (87%) following the service. Moreover, patients who received the asthma MUR offered by the pharmacy generally considered themselves armed with a better understanding of how to use their inhalers.37

All patients who had received an MUR during a three-month period in six pharmacies in the Sefton area were given a questionnaire. Most (81%) of the 98 patients that responded, identified the opportunity to ask questions about medicines as being what they wanted from the service and 91% agreed that MURs were valuable.38

Postal questionnaires were answered by 81 patients that had received an MUR in a community pharmacy in Derby. Two-thirds (68%) of them thought they learned more about their medicines, over half (58%) thought the MUR had made them more aware of their medicines’ side effects and 83% thought the service had improved their compliance.39

A small survey interviewed 29 patients who had received an MUR in a rural pharmacy and 90% of them felt that the MUR had enhanced their knowledge. The main themes of enhanced knowledge were on awareness of side effects,
understanding of medication and the importance of proper techniques of taking and using medication. All the patients would recommend the service to others.\textsuperscript{40}

A 2016 study, which aimed to determine the information needs and reported adherence of patients prescribed medicines for chronic conditions in those who have received an Advanced Service (MUR or New Medicine Service) and those who have not, found that patients who had received an Advanced Service reported greater adherence and satisfaction with their treatment as well as feeling better informed about their medicines as opposed to those who didn’t receive the service.\textsuperscript{41}

In 2016, researchers from the University of Reading\textsuperscript{42} published a nationwide study of patient satisfaction levels with MURs within one pharmacy chain. They developed a questionnaire, based on an existing framework\textsuperscript{43} of assessing patient satisfaction levels with the service, which was piloted on a small scale initially. The pilot led to the launch of a survey in 105 community pharmacies over a three-month period which showed that 97% of people agreed or strongly agreed they were satisfied with the MUR service they had received. Agreement was highest in relation to satisfaction with the time spent by the pharmacist listening to the patient (98%) and the pharmacist’s personal approach towards the patient (99%). When asked if they felt more confident about their condition following the MUR, 80% of patients agreed. The majority of patients (90%) would use the service again and 90% would recommend it to others.

**MURs reach patient groups that do not generally engage with primary care**

Over a third (37%) of 965 patients who received an asthma MUR at a community pharmacy were primarily non-adherent with their medication.\textsuperscript{37} Thirty percent hadn’t seen a GP or practice nurse within the last 12 months and their level of adherence to asthma medication was lower than in the group who had received a review at their GP practice during the last 12 months. The most common secondary adherence issue for both adherent and non-adherent MUR patients was difficulty using the inhaler. During this study, pharmacists made almost 1,800 interventions; 41% of them were classified as device check and demonstration and 49% of interventions were educational.

During an MUR, pharmacists have an opportunity to review use of non-prescribed medication and supplements, too. Even if not taken regularly, their use might need to be addressed.\textsuperscript{44} In a national audit, 75.5% of patients responded that they buy over-the-counter medicines or use complimentary medicines, such as herbal medicines or vitamin supplements. Moreover, 70.6% said they had at home, medicines they do not use or need any more.\textsuperscript{34}

**There are more benefits that could be gained from MURs**

In a separate study, two-thirds of MUR patients considered they would benefit from a follow-up visit.\textsuperscript{11} Moreover, in the area of NHS Bristol, where targeted MURs are provided to those taking antidepressants, the commissioners were reported to be considering follow-up targeted MURs to encourage adherence to the medicines in the longer term.\textsuperscript{12}

\textsuperscript{40} Patel P & Lefteri K. The perceived value of MURs to patients in a rural community. International Journal of Pharmacy Practice. 2009; 17; Supp 2: B86
\textsuperscript{41} Twigg et al. 2016. What do patients need to know? A study to assess patients’ satisfaction with information about medicines. International Journal of Pharmacy Practice
Findings of a multi-method study of PCOs in England suggested a need for greater communication and collaboration between pharmacists and GPs concerning MURs.45

In a national audit, over 91% of the general practices submitting data had patients who received MURs from local pharmacies, but over half had not had a meeting with a community pharmacist about MURs. Only a quarter had met with one pharmacist and only 1.7% had met all local pharmacists. Positive features in their responses were that most considered the recommendations of MURs as appropriate (74.5%) and almost 33% provided feedback to the pharmacist. However, only 7.5% were referring patients for an MUR.34

**Focussed questioning**
Pharmacists can use tools and instruments containing focussed questions when conducting MURs to help focus their consultation towards a specific clinical area, such as asthma or diabetes.

A number of LPCs, charities and pharmaceutical companies have produced specialised toolkits to assists pharmacists in delivering effective and high-quality MURs to patients. The toolkits build on the standard MUR consultation and offer additional support for patients with specific conditions such as osteoporosis, diabetes, COPD and dermatological conditions such as acne and psoriasis.

A Devon LPC pharmacist-led diabetes support pilot service won an award for demonstrating its effectiveness in supporting patients. The pharmacist intervention reduced the number of patients who were categorised as ‘low adherers’ when entering the service by half (50%). The service included a face-to-face consultation with the pharmacist to assess how patients were using their medicines and to make recommendations to help improve adherence, followed by a telephone consultation two to three weeks later to reassess adherence and provide further advice if needed.46

If you have queries on this PSNC Briefing or you require more information please contact Zainab Al-Kharsan, Service Development Pharmacist.

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46 Devon Local Pharmaceutical Committee. The Devon LPC pharmacist led diabetes support service evaluation (Dec 2013)