**Medication Therapy Management**

It is estimated that between $177 and $290 billion is spent each year in the US as a result of the improper use of medications (Burns et al., 2008; “Congress: MTM Benefits,” 2016; Wang et al., 2015). This is due in part to patients with multiple chronic diseases being overloaded with prescriptions, apathy toward their health, side effects of the drugs not being adequately addressed, or a hard-to-follow dosing regimen (Chang, Ho, Chan, & Klotz, 2015). To help address this, all Medicare part D prescription plans are required to include a medication therapy management (MTM) program (DeBenedette, 2013). The aims of MTM are to improve patient outcomes (“Congress: MTM Benefits,” 2016; Reinke, 2015), allow patients to be more involved in their healthcare management (Burns et al., 2008; “Congress: MTM Benefits,” 2016; Reinke, 2015), and ultimately reduce healthcare costs (“Congress: MTM Benefits,” 2016; Edlin, 2016; Schommer, Doucette, Johnson, & Planas, 2011). The present article will outline the current research on pharmacist-delivered MTM, its benefits, and the challenges that it faces.

A comprehensive medication review (CMR) is a core component of every MTM program (Edlin, 2016). There are several benefits to having this performed by a pharmacist rather than another health care provider. A CMR provided by a pharmacist is ‘more robust’ (Edlin, 2016) than one provided by a doctor, because even with the use electronic health records (EHRs), medication lists don’t include over-the-counter drugs, doctor samples, discontinued medications, or medications from other health care providers (Talsma, 2012). Having a complete review of all medications the patient is taking, and their medication history, helps to identify any unnecessary medications, causes of adverse events, including drug interactions, and allows dosage to be adjusted, thus improving patient outcomes.
One of the main aims of MTM programs is to enable patients to take an active role in their medication management, by providing them with information on their medications, and educating them on their effects (Burns et al., 2008). This is a core component of version 2.0 of the MTM model (Burns et al., 2008), which provides a patient-centred approach in order to empower patients and decrease patient apathy towards their health (Chang et al., 2015).

The positive effect that educating patients can have on health behaviours is evident in a study conducted by Brummel, Soliman, Carlson and de Oliveira (2013), in which they invited patients with diabetes to take part in an MTM program for one year, and monitored those who opted in and those who opted out. They found that one year after discontinuation of the MTM program, rate of tobacco abstinence was higher in the MTM group. Similarly, a group of seniors with hypertension took part in an at-home pharmacist-delivered MTM program for 4 months, and reported that they had changed their health behaviours due to the knowledge they had gained during the program (Blank, 2016). This suggests that educating patients on health issues as part of an MTM program can have a positive effect on health behaviours, thus improving patient outcomes, and reducing costs associated with negative health behaviours.

As well as having an indirect effect on patient outcomes due to changing health behaviours, MTM has also been shown to have a direct effect on patient outcomes and chronic disease management goals. In a randomized pragmatic trial, Hirsch et al. (2014) found that when comparing a pharmacist-primary care provider approach to MTM with usual care for hypertensive patients, those in the MTM group had significantly lower SBP at 6 months, although the difference was not significant at 9 months. Of those patients in the MTM group, a greater percentage of those who continued to see the pharmacist throughout the course of the trial were on target at 6 and 9 months versus those who returned to their
primary care provider. This suggests that pharmacist-delivered MTM can have a positive effect on the management of chronic diseases.

Similarly, in the aforementioned study by Brummel et al. (2013), a higher percentage of patients who received MTM had their diabetes optimally managed at the end of the program versus the beginning of the program. However, this percentage returned to baseline levels one year after discontinuation, suggesting that regular follow-up is needed to sustain the positive effect of MTM on patient outcomes. Such follow-up may be difficult for pharmacists to perform due to lack of time, inadequate staff, or commitment to dispensing activities (Schommer et al., 2011). However, as demonstrated by O’Callaghan (2014), this can be addressed by training pharmacy technicians in several tasks central to the MTM program that they would not typically receive training in, including the provision of follow-up care through phone calls. One year after employing teams consisting of a pharmacist, Postgraduate Year One resident and clinical pharmacy technician in five safety net clinics, pharmacist productivity had increased 40-50%, and they went from seeing an average of 10-12 patients a day to an average of 15-17 a day. Technicians were also found to produce highly accurate medication records, a process that usually takes pharmacists over 40% of the time involved in a medication reconciliation. This suggests that pharmacists can reduce the time spent on MTM programs by employing highly skilled pharmacy technicians, all the while improving patient outcomes by providing a more comprehensive follow-up procedure.

Lack of time is not the only barrier to pharmacist participation in MTM programs. Lack of reimbursement is another factor that influences pharmacists’ decision to provide MTM services. Analysis of a roundtable discussion by opinion leaders revealed a need for a better defined pricing structure to provide adequate reimbursement to pharmacists (Schommer et al., 2011). Giving pharmacists ‘Healthcare Provider Status’ would allow many health plans to provide compensation for MTM services delivered by pharmacists. However,
Medicare 2016 Star Ratings include a measure analysing the percentage of patients who are eligible for an MTM program who take part in one (Dotinga, 2015), and this should increase the amount of pharmacies willing to offer this service (Edlin, 2016).

Lack of electronic standards across states also discourages pharmacists from offering this service (Edlin, 2016). However, Reinke (2015) identifies two healthcare companies developing innovative IT solutions to help with MTM recruitment and management. One is software that uses pharmacy management and claims systems to identify patients who meet the criteria for MTM, and prompts pharmacists to contact them. The other is a cloud-based service that collects patient data and makes them available for adherence programs like MTM. Software such as these could help standardize MTM practice across states, and promote communication between health care providers. In a case study on MTM (Chang et al., 2015), the patient did not receive new prescriptions for a month following CMR completion, because the physician thought that the pharmacist could make medication changes without them, which resulted in the pharmacy undertaking extensive follow up procedures. This could have been avoided with the use of a shared EHR such as the aforementioned cloud-based system.

There are also several barriers to patient participation in an MTM program. Although the Centers for Medicare & Medicaid Services (CMS) lowered the threshold for eligibility criteria in 2010 in order to increase accessibility, the majority of part D plans have since increased their minimum threshold to the maximum allowable for all criteria, i.e., a minimum of 3-5 chronic diseases, a minimum of 8 or more specified drugs, and chronic diseases must be those specified by CMS (Wang et al., 2015). CMS also made the opt-out method of enrolment mandatory for part D MTM programs, and lowered the minimum annual drug cost from $4000 to $3000. These decisions may have increased accessibility to the program, but this effect was negated by the restrictions in criteria that the majority of plans have adopted.
since 2010, resulting in a stagnant level of participation. As Reinke (2015) points out, only 1 in 20 eligible patients receive a CMR, suggesting that restrictive criteria imposed by health plans are limiting the access of people who could benefit from this service.

According to O’ Callaghan (2014), there will not be enough physicians to meet the demand of primary care by 2020. This highlights the importance of coordinating efforts between health care providers to ensure optimal care for patients with chronic diseases. 24 Republicans and 20 Democrats from the House of Representatives signed a letter urging the CMS and Centers for Medicare and Medicaid Innovation (CMMI) to ensure that retail community pharmacists are incorporated into enhanced MTM models (“Congress: MTM Benefits,” 2016), showing bipartisan recognition of the importance of pharmacists to the optimization of MTM services.

Although the MTM concept is becoming more developed (Schommer et al., 2011), and services are improving (Wang et al., 2015), healthcare agencies need to be aware of the barriers that exist to its integration into pharmacy practice models (Schommer et al., 2011), and its lack of accessibility to a large number of patients who could benefit from it (Wang et al., 2015). Giving pharmacists ‘Healthcare Provider Status’ would help pharmacists receive adequate reimbursement for MTM services, and would also encourage patients who wish to avail of these services at their community pharmacy.

MTM services that are performed by pharmacists are more cost-effective than those performed by primary care providers (Hirsch et al., 2014), and because of the increased effectiveness of their CMRs (Edlin, 2016), they promote better patient outcomes, and thereby reduced costs due to nonadherence or adverse events. Greater commitment should be made by healthcare agencies to ensure that pharmacists are given every provision necessary to ensure that they can provide the highest quality MTM services to chronic disease patients.
References


