MEDICINES MANAGEMENT

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Impact of an Intermediate Care Medicines Optimisation Team in Fracture and Falls Prevention

Kevin Madden and Dr. Karen Miller discuss how medication can have an impact on the risk of falls in older people, and how medicines review by a pharmacist can prevent this.

Medicines Management in older people: a work in progress

Professor Carmel Hughes discusses appropriate prescribing of medicines for older people, and getting the balance right between many medicines and too many medicines.

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Welcome to issue 25 of Innov-age, focusing on the topic of Medicines Management.

Polypharmacy is defined as the concurrent use of multiple medications. This becomes much more prevalent in the elderly, affecting about 40% of older adults living in their own homes. It is essential therefore that medication regimes for older people are well managed, and that prescribing is appropriate. Medicines management for this age group in particular is an important area of current research and innovation.

In this issue, Professor Carmel Hughes introduces the importance of medicines management for older people, and the challenge of appropriate prescribing and getting the balance right between necessary medication and prescribing too many medicines.

Kevin Madden and Dr Karen Miller discuss the importance of assessing the appropriateness of medicines for older people, in particular as an important factor in preventing falls, and how the introduction of the intermediate care pharmacy team can aid this.

Julia Carthew and Clare Howard introduce the work of the Academic Health Science Networks in England in Medicines Optimisation, including the ‘Me and My Medicines’ scheme and the Meet Mo campaign.

Dr James Burnstone introduces Elucid’s Pill Connect bottle, a digital health tool that can communicate with a patient’s smartphone and control the patient’s access to their medicines, by electronically dispensing the medicine quantity.

Also in the issue, Professor Felicity Smith and Dr Liz Jamieson discuss how people who assist older people with their medicines may not fit the traditional definition of a carer, and how health professionals can provide them with appropriate information and support. Dr Heather Barry discusses how medicines management can be optimised for people with dementia, and the role of carers in this process.

Dr Deborah Patton introduces the ‘Locks and Keys’ approach to provide solutions to identified medication adherence problems. AutumnCare introduce their electronic Medication Administration Record and discuss how this can be used to safeguard residents in care homes with medications.

Medications are one of the most important healthcare interventions in the elderly. This issue of Innov-age introduces some of the most exciting research and innovation in this area, and demonstrates how medicines can be better managed in older people to ensure they are getting the best possible treatment and outcomes.

Jackie Oldham
Honorary Director, Edward Centre for Healthcare Management Research
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Medicines Management in older people: a work in progress

Carmel Hughes is Professor of Primary Care Pharmacy and Head of the School of Pharmacy at Queen’s University Belfast. She is a pharmacist by training, a former Harkness Fellow in Healthcare Policy and a former Primary Care Career Scientist. She is an Editor for the Effective Practice and Organisation of Care Cochrane Review (EPOC) group and Associate Editor for the journal Pilot and Feasibility Studies. Her research interests include the quality of care for older people, the development of interventions and evidence-based medicine.

The use of medicines in older people (usually designated as those over the age of 65 years) has been described as the ‘single most important health care intervention in the industrialised world’ (Avorn, 2010). A term which is often associated with the use of medicines is ‘Medicines management’, defined as encompassing ‘the entire way that medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that they make to producing informed and desired outcomes of patient care’ (Audit Commission, 2001). In short, the essential components are prescribing, review and administration of medication (including adherence to medicines). In older people, concerns have been raised in relation to potentially inappropriate prescribing (PIP), a term used to describe a number of suboptimal prescribing practices, particularly the use of medicines that introduce a greater risk of adverse drug-related events where a safer, as effective alternative is available to treat the same condition (O’Mahony and Gallagher, 2008).

Previous work conducted by researchers led by Professor Hughes has shown that in a sample of older people (> 70 years old; n = 160,000) in Northern Ireland, there was an overall prevalence of PIP of 34%, as measured by using a screening tool which identifies inappropriate prescribing (Bradley et al., 2012). Those receiving seven drugs or more were five times more likely to be exposed to PIP than those receiving up to three medicines. It is also known that older people may have difficulty taking all of the medicines that have been prescribed for them, a problem sometimes described as non-adherence. This may mean that their medical conditions may not be well-controlled, they may have to see their doctor more often, and they may be admitted to hospital. However, as older people will often have a number of medical conditions that will need to be treated, inevitably they will be prescribed many medications, sometimes described as polypharmacy. Therefore, the challenge is to get the balance right between many medicines (all of which may be appropriate) and too many medicines (some of which may be inappropriate) (Cadogan et al., 2016).

Therefore, Professor Hughes and her team in Belfast have been working on studies which try and get this balance right between appropriate and inappropriate polypharmacy. The team has undertaken a systematic and step-wise approach to developing interventions (new approaches) by carrying out interviews with doctors, pharmacists, older patients and carers to explore what might improve the prescribing of polypharmacy and how to take many medicines. The findings from the interviews identify what might help to improve prescribing of, and adherence to, appropriate polypharmacy (e.g. better knowledge and skills), and what might act as a barrier (e.g. not enough time, concerns about medicines). The team have then developed interventions to try and improve prescribing of appropriate polypharmacy for older people, and help these patients take the medicines as intended and reduce the likelihood of poor adherence. The interventions involve educating prescribers about what should or should not be prescribed, or encouraging patients to take their medicines by using some kind of reminder system. The interventions are then tested in small studies (feasibility studies) to evaluate if the intervention is practical, if information can be collected that might help to judge, in a larger study, that the intervention is effective, and finally, if the intervention is acceptable to healthcare professionals, patients and carers.

These small feasibility studies have allowed Professor Hughes and her team to make some refinements and adjustments to the interventions. At present, the team is working on two larger studies (following on from feasibility work) on prescribing appropriate polypharmacy and adherence to polypharmacy in older populations.

Learning Points

- Prescribing of medicines is the most important health care intervention experienced by older people.
- The challenge in prescribing is to get the balance right between appropriate and inappropriate polypharmacy. The goal should be appropriate prescribing, irrespective of the number of medicines.
- Taking a step-wise and systematic approach to developing interventions that seek to improve medicines management provides an opportunity to test and refine these interventions before moving to larger studies.

References:


Patient-centric development in medicine management innovation

Dr James Burnstone is CEO at Elucid mHealth, a Manchester based technology company building novel digital health tools. James studied Electronic & Electrical Engineering at the University of Manchester and stayed on after to earn a PhD in machine learning and visual perception. James is an inventor on a number of patents and is passionate about creating novel healthcare solutions with a patient-centric, real-world focus.

Following the prescribed guidelines of a regimen, be it medicine, diet or therapy, is a necessary step to meeting the intended outcome. Unfortunately, it is common for medicine prescriptions not to be followed. Patients who don’t take their medicines as prescribed risk not getting better and this can lead to added costs to the NHS. In 2013, Elucid mHealth was formed to build a smart pill bottle to assist medicine management. The idea was to embed technology into medicine packaging. The NICE guidelines on medicine adherence state that patients should be involved in adherence improvement measures (National Institute for Health and Care Excellence, 2009). Therefore, Elucid were keen to ensure that the technology would support patients whilst providing clinicians with accurate data about the patient’s medicine management, so they could work together to address any problems.

Elucid’s Pill Connect bottle is, on the outside, a normal medicine bottle. Inside, it has technology which transforms the bottle into a digital health tool. The bottle, communicating with the patient’s smartphone, controls the patient’s access to their medicines based on the times in the prescription, preventing accidental double dosing or dosing at the wrong time. It prompts the patient and electronically dispenses the medicine quantity. These features were designed to remove the unnecessary difficulties associated with medicine use: What time is it due, how many should I take, did I take my morning dose. However, these features cannot have their intended impact if patients dislike or can’t use the technology.

Poor medicine management within the NHS is found when patients take 3 or more different types of medicines (National Centre for Drug Adherence Testing, 2018). The number of patients taking three or more prescription medicines increases with age, from 4% aged 16-24 to 82% aged over 85 (Moody et al., 2017). Elucid ran a patient study with a group of 10 over 60s at a Lancashire GP practice who were invited to spend a morning using the bottle.

When building anything, it’s easy for bias to infiltrate the design, particularly when the team building it are similar ages and technical experience backgrounds. It was vital that the opinions of volunteers with different experiences and attitudes to technology were sought. Many insights were gained throughout the study and many points that had been overlooked were identified. The results of the patient study combined with other involvement studies defined the user acceptance requirements for the next development cycle.

The feedback that was received included improving the layout of the application screens, use of simpler language in text prompts and the ability to modify this, the addition of text-to-speech features for the hard of hearing and more obvious button shapes. Though many of these changes seemed small, overlooking these and delivering the application to users who found it difficult to use could have made their medicine management worse.

In late 2018, a new iteration of the bottle prototype and mobile applications were finished, incorporating the study feedback. A trial is now being run within Manchester NHS to collect patient-acceptance data. Once complete, the patient pathways where the technology can create improvements for patients having difficulties with medicines use will be identified. It is hoped that in the future the incorporation of new digital health tools such as this and other emerging innovative services will greatly reduce the pressures on the health service whilst empowering patients to manage their conditions better and improve outcomes.

As the product and the health care system evolve, Elucid will continue to work with patients to better understand their experiences.

Learning Points:

- Poor medicines management within the NHS is found when patients take 3 or more different types of medicines; this increases with age.
- Elucid’s Pill Connect bottle is a digital health tool that communicates with the patient’s smartphone and controls the patient’s access to their medicines, by electronically dispensing the medicine quantity.
- It is vital that the opinions of users are sought, as many insights can be gained and points that had been overlooked can be identified as technologies are developed.

References:

Safer Medication Management for Care Homes

AutumnCare specialises in electronic care management systems for elderly care. Designed by care home managers, AutumnCare systems increase efficiency in clinical and organisational processes. Less time spent on documentation allows staff to maximise their interaction with residents.

The AutumnCare suite encompasses assessments, care plans, notes, messages, charting, medication and managerial oversight.

Importance of using systems for Medications Management

Safely handling medications in the care home setting is of vital importance. The management and administration of medications has many potential pitfalls, however, with several drug rounds per day for multiple residents at a time, all with extensive prescriptions and dozens of items of Medication Administration Record (MAR) paperwork. The solution is to minimise risk by proactively addressing scenarios prone to human error.

By addressing the common pitfalls of paper-based medication management, it is possible to safeguard care home residents and manage medications safely and effectively.

AutumnCare Clinical Operations Manager, Claire Bailey, has previously worked in care homes as Care Home Manager. On the basis of years working in this environment, Claire has identified some of the most common challenges faced in ensuring medications are managed safely.

Signature Omissions

All administered medications must be signed for by a qualified member of staff to comply with CQC regulations concerning safety. Signatures are forgotten all too easily, especially during busy medication rounds or if a staff member is called to another task or emergency before completing their documentation.

Missing signatures pose significant danger due to the ambiguity of what has happened – was the medication administered or was it not? If a signature is not captured, the resident is at risk of going without a dose of critical medication or of being administered a potentially dangerous double dose in quick succession.

Additionally, without a signature it becomes incredibly difficult to identify who administered what, making it a time-consuming task to track down the relevant staff member if more information is required.

AutumnCare’s Electronic Medication Administration Record (eMAR) enforces signatures being entered for every medication before a round can be completed and exited, safeguarding residents and ensuring completeness of records.

Time Critical Medications

When managing conditions such as Parkinson’s disease, medications must be given within a certain time window. A late administration can have grave consequences: the resident may deteriorate rapidly and lose functionality, becoming stiff and unable to walk, leaving them at a higher risk of falls.

An eMAR is capable of identifying all time-critical medications and either putting them into their own round or putting them at the start of a round. Administering these first protects residents against adverse side effects.

Inaccurate Time Recordings

A significant benefit of electronic medication records is the ability to determine the exact time of administration for a medication. Automatic time stamping of every action completed within the system is far superior to paper means, which leave it far more difficult to spot issues such as too short an interval between doses or medications given too late. Managers are able to spot these issues and take action to correct them, whereas with paper they may not be discovered until far later.

The same is true for easily managing and alternating the location on the body of fentanyl patches and other transdermal medications. A comprehensive eMAR is able to document the past three patch locations – these can then be easily referenced each time the patch is due to be checked or replaced.

Lack of Managerial Oversight

A Care Home Manager is responsible for overseeing the entire care home. This level of oversight is incredibly challenging to achieve with a paper-based system, where critical details can be buried in reams of paper.

The sophisticated AutumnCare eMAR is able to alert Managers to clinical risks and highlight key information, allowing them to mitigate any potential risks. Visual indicators displayed on a dashboard can be configured as required in order to alert, for instance, to residents outstanding for medication or medications low in stock.

Avoiding Alert Fatigue

An eMAR negates many of the risks inherent in paper-based medication management. However, a good system will never automate everything. The purpose of an eMAR is to eliminate the enormous administrative overheads required of care staff using paper. Ultimately, there are still areas that require clinical analysis and judgement to be used.

The resident’s safety is paramount, therefore any automation that could compromise this will not be incorporated into the system. AutumnCare is designed to supplement best practice, not to promote shortcuts. Scanning of inbound medications for example, is not blindly computerised due to the dangers posed by incorrect boxing or labelling.

Learning Points

• Paper based medication management, by its nature, is rife with risk due to a high margin for human error, lack of oversight and no alerting system for things that slip through the cracks.
• eMAR systems safeguard residents by providing a high level of managerial oversight. Managers can identify and respond to potential clinical risks, preventing avoidable incidents.
• eMAR systems assist care staff in their jobs but do not replace the need for clinical analysis and judgement.

If you would be interested in learning more about AutumnCare or in discussing eMARS, please feel free to get in touch via info@autumn.care or 01625 322 400.
Medicines optimisation and the AHSNs: helping people get the most from their medicines and reducing medication errors

Building on a career in Community Pharmacy, Clare Howard has held management roles in a range of NHS settings. As the first Deputy Chief Pharmaceutical Officer for NHS England, Clare led the Medicines Optimisation (MO) programme and delivered the first national MO dashboard as well as chairing a number of national committees.

Clare’s current portfolio includes Clinical Lead for MO at Wessex Academic Health Science Network (AHSN), where she led the publication of the first national set of polypharmacy prescribing comparators in England. In 2014, Clare was designated a Fellow by the Royal Pharmaceutical Society (RPS) and attained Faculty Fellowship in the same year. Clare chaired and was the lead author of the RPS Polypharmacy Guidance published February 2019. Special interests include polypharmacy, medicines-related data, measurement for improvement, women in leadership and patient safety.

Julia Carthew is the National Programme Manager for Medicines Optimisation for the AHSN Network. She has a background in project and programme management, initially for IT projects and more recently around process and organisational change programmes. She has worked for the NHS for most of the last 18 years.

From their inception in 2013, the majority of Academic Health Science Networks (AHSNs) had medicines optimisation (MO) programmes in place. This work aimed to address some big challenges around medicines management. Despite spending over £17 billion per year on medicines, we know that 30-50% of medicines are not taken as intended. Medicines optimisation aims to help people to get more from their medicines. In 2018, all 15 AHSNs signed up to a national programme of medicines optimisation.

Transfers of Care
As part of this national programme, all 15 of England’s AHSNs aimed to improve the transfer of care around medicines (TCAM) when patients move between care sectors. The evidence tells us that the transfer of care process between care providers, such as hospital and home, is associated with an increased risk of problems with medicines. Between 30% and 70% of patients experience unintentional changes to their treatment, or an error is made, because of a miscommunication during the transfer of care, and this can result in the patient being readmitted to hospital.

Around 60% of patients have three or more changes made to their medicines during a hospital stay and only 10% of our older patients will be discharged on the same medication they were on previously. Therefore, when some patients leave hospital, although the hospital staff will have discussed their medications with them or their carer, problems can still arise. Studies show that where the patient is referred to someone such as their pharmacist in the community, patients find it helpful to discuss medication changes again, talk about side-effects and allow an opportunity for questions.

The TCAM programme meets this need by implementing a safe and secure, digital, clinical handover from the hospital to pharmacists in the community and so when patients in hospital are identified as needing extra support with their medicines, they are referred for advice, on discharge, to their pharmacist. Original work in Newcastle, Lancashire, the West of England and the Isle of Wight has shown that patients who see their community pharmacist after they’ve been in hospital are less likely to be readmitted to hospital and if they are readmitted, they will experience a shorter stay. To date, over 40 hospital Trusts across England have implemented TCAM, with more going live every month. For more information, go to www.wessexahsn.org.uk and view medicines optimisation.

Polypharmacy
Polypharmacy is the term used when a patient is taking multiple medicines on a long-term basis. As the population ages and more people live longer with multiple long-term
conditions, polypharmacy can become a significant problem. This is a growing challenge for both the NHS and for patients and carers. People can experience problems either in the number of medicines that they are taking, or they can face clinical challenges around the combination of medicines that they are taking, or both. AHSN polypharmacy projects are taking place in different care settings, from residential and care homes to GP Practices to hospitals. All of these projects involve a “holistic review of medications” with the patient and/or carer to ensure that the patient’s needs and wishes are met and that the most appropriate combination of medications is being prescribed. At the same time, Wessex and North East North Cumbria AHSNs have worked with several experts to develop a national polypharmacy dashboard, now used across the country to help GPs to identify groups of patients who are more likely to be at risk from problematic polypharmacy. This work has been well received and is leading to improvements in care in places using the dashboard well.

Over the last year, Yorkshire and Humber AHSN have championed a locally-developed scheme called ‘Me and My Medicines’ (meandmymedicines.org.uk). This is a campaign developed and led by patients and supported by clinical staff, to help people ask questions about their medicines and feel more comfortable in raising concerns, and so use their medicines better. Patients, families and carers are encouraged to ask questions about their medicines so that they can be helped to get the most benefit. In some cases, it may be agreed that certain medicines are no longer needed or that the person isn’t managing to take all the medicines prescribed, so a more manageable medication regime can be developed in collaboration with the patient. Everyone helping the patient’s experience of the NHS, including Community Pharmacy, GPs, Hospital Doctors, Nurses and Hospital Pharmacy are being encouraged to listen to, better understand, and help overcome problems that people may experience when using medicines. It is expected that, by adopting this approach, more people will have the confidence to use their medicines as agreed. The campaign has produced a Medicines Communication Charter, for both the patient and/or carer and healthcare professional to sign up to, to aid a better conversation about medicines. Plans are now being developed to implement this scheme in two further AHSN areas in the south.

For more information, visit www.meandmymedicines.org.uk or follow @MeAndMyMeds on twitter.

Meet Mo
As a part of the medicines optimisation work programme, three information and campaign videos have been produced to complement, inform and help patients and staff alike seek medicines reviews, understand transfers of care, and to encourage the use of electronic repeat dispensing. These subjects are covered from the perspective of Mo – a deliberately ageless, genderless and ethnically-neutral character – and aim to highlight the help and support out there, via humorous, engaging and short videos. So far, collectively, the three videos have achieved nearly 200,000 views and plays.
You can watch the Mo videos at www.wesseahsn.org.uk/Mo, and if you’d like to use the videos, contact: enquiries@wesseahsn.net.

Learning Points:

- The transfer of care around medicines (TCAM) programme provides a safe and secure, digital, clinical handover from the hospital to pharmacists in the community. Patients who see their community pharmacist after being in hospital are less likely to be readmitted to hospital and if they are readmitted, will experience a shorter stay.

- The ‘Me and My Medicines’ scheme is a campaign to help people ask questions about their medicines and feel more comfortable in raising concerns, and so use their medicines better.

- The Meet Mo campaign involves three information and campaign videos that have been produced to complement, inform and help patients and staff seek medicines reviews, understand transfers of care, and encourage the use of electronic repeat dispensing.

Acorn Occupational Health Ltd
‘Your Health is Our Business’
Occupational Health Services for Care Homes

Acorn Occupational Health Ltd is a leading provider of Occupational Health services in the UK, based in the North West of England. Acorn’s experience lies in providing tailored Occupational Health solutions for customers including Health Surveillance, Ergonomic Assessments and Sickness Absence/Management Referrals. SEQOHs accredited since 2012, Acorn provides Safe, Effective, Quality, Occupational Health Services. The services can be delivered onsite, in the mobile health surveillance unit or from Acorn’s clinic. The dedicated team of experienced Occupational Health Nurses, Technicians and Physicians, deliver a flexible, proactive service assisting businesses to effectively manage issues in relation to the health and wellbeing of their employees.

What is Occupational Health?

Good health is good business. Occupational Health is not only how work affects a person’s health, but also how someone’s health can affect their work, physically or mentally. Investing in the health and wellbeing of employees is crucial to maintain competitive advantage. In the care industry high levels of absenteeism and the costs associated in relation to staff turnover can add to other staff becoming stressed due to a heavy workload, resulting in spiralling agency bills. The effect of wellbeing initiatives have shown that interventions do work and providing an Occupational Health service has a positive impact on a company as a whole and their workplace culture.

Our services that may be relevant to you:

- Post Job Offer Questionnaires
- Fit for Task - Night Worker, Drivers Medicals
- Sickness Absence/Management Referrals
- Well Person Medicals
- Vaccinations
- Know Your Numbers (Cholesterol, Glucose and Blood Pressure Check)
- Display Screen Equipment (DSE) Workstation Assessments
- Site needs assessments
- Health & Safety Consultancy
- Resilience Training
- Employee Assistance Programme

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The cost of ill-health to your business

Whatever the reason, ill health comes at a cost, not only to organisations through absenteeism and downtime but more worryingly through lost productivity as it has been found that employees continue to work whilst unwell (presenteeism). As businesses cannot function without their biggest asset—their people—there is a clear case for senior managers to adopt wellbeing initiatives as part of the overarching business strategy. The initiatives do not have to be costly and with the right support from line managers, occupational health professionals and colleagues, work can be a happy, positive place to be.

According to the latest Chartered Institute of Personnel Development (CIPD) survey published in April 2019, the average level of employee absence is 5.9 days per year. Stress-related absence has increased over the last year in nearly two-fifths of organisations and the most common methods companies are using to address this include improved work-life balance and employee assistance programmes.

Nearly three-fifths of organisations have seen an increase in the number of reported common mental health conditions, such as anxiety and depression, among employees in the last 12 months. Sickness absence management has a significant impact on the damaging effects of the profitability and success of a business.

Once an employee has been off sick for more than six weeks, the problem is often compounded and the chances of returning to work at all are significantly reduced. Early intervention and proactive management are vital to get employees back to good health and safely back to work.

Acorn’s sickness absence services include:

- Reviewing and the writing of a sickness absence policy
- Management referrals
- Early intervention - limiting the possibility of any absence becoming long-term
- Telephone consultations
- Medical assessments
- Clear management reports
- Rehabilitation programmes to support return to work
- Ongoing Occupational Health advice and support

Returning to work is an incredibly important part of the recovery process for any individual that may be experiencing health problems. Having the support from professionals in Occupational Health is a sound and reassuring way to confidently get back into a routine at work.

As well as referral appointments, Acorn Occupational Health Ltd offer a variety of Occupational Health services. Please visit our website www.acornoh.co.uk for more information. Please contact a member of Acorn team to discuss how we can assist your employee return to work on 01260 277797 or email at info@acornoh.co.uk.

Learning Points:

- Sickness absence management has a significant impact on the damaging effects on the profitability and success of a business, particularly in healthcare.
- Occupational Health services are essential to help individuals experiencing health problems get return to work.
- Companies striving to become an employer of choice through the introduction of wellbeing initiatives shows to the outside world that the organisation has values which may give them a competitive advantage. Employee engagement and staff retention have also been shown to have improved where organisations have wellbeing initiatives.
Challenges of supporting family carers who help older people with their medicines

Felicity Smith, an academic pharmacist with experience in hospital and community services, and Liz Jamieson, a research psychologist, have been working together for many years. Recognising the importance of the help with medicines that is given and received, and the challenges this presents for patients, carers and health professionals, their aim has been to identify how health and pharmacy services might more effectively support partnerships between patients and carers to achieve optimal outcomes and reduce carer burden.

As well as working with carers and patients, they have collaborated with carers’ organisations, health and social care professionals and academics from many disciplines.

Many older people who take medicines for long-term conditions will receive assistance from someone, often a spouse or family member, who may provide practical support with medicines. This may be at any stage of the medication management process: ordering and maintaining supplies, assisting with reminders and/or administration, and monitoring for effectiveness or side effects.

Many people who assist someone with medicines may not see themselves as a carer: the assistance they provide may be seen as minimal (e.g. just collecting a medicine from a pharmacy). But this help may be vital for clinical outcomes by ensuring the person they assist has a continuous supply. Different storage sites in the home, pack sizes and formulations, and variable need for PRN medicines (medicines that are taken “as needed”), can mean that this is a complex task, contributing to the risk of running out and the need for new supplies at short notice. Many carers will assist in the use and administration of medicines on a daily basis. Frequent and complex dosing regimens can be burdensome for carers who may have competing demands of work and/or childcare. The administration of different formulations, e.g. a range of oral dosage forms in addition to patches, eye-drops, external products, etc. can add to complications for carers.

Many carers may also be concerned to ensure that medicines are suitable. Carers may form views regarding the risks and benefits of any therapy, have concerns about side-effects, monitor and advise on the need for PRN medicines, and seek confirmation of intended and unintended changes to medicines, formulations or doses.

Although recent research has highlighted the range of medicines-related responsibilities assumed by carers, only a tiny proportion of medicines-related roles of carers will be visible to health professionals. For example, GPs and pharmacists may be aware that many people order and collect medicines for others but they will not necessarily be aware of the full extent of the assistance provided at home or elsewhere. Within the healthcare system, formal channels of communication to carers are often limited. This is especially so for people who do not formally identify as a carer, but nevertheless provide important help with medicines.

The contribution of informal carers to healthcare provision is widely acknowledged. The UK government and many policy organisations encourage prioritisation of interventions to support carers. How the needs of carers who provide help with medicines can be addressed by health professionals has been the subject of a recent research study focusing on older people because they are most likely to be taking a larger number and range of medicines.

The principal focus was community pharmacy services, as this is where most patients or their carers will obtain their medicines. Pharmacists are also increasingly undertaking more clinical activities to support people using medicines for long-term conditions so that they achieve optimal outcomes. However, pharmacy services cannot be viewed in isolation. Patients and carers interact with a range of health professionals across primary and secondary care in the management of their health and receipt of medicines, and the challenges of providing support for carers will apply more broadly.

The work was in two stages. For the first stage, a review of legal and ethical documents and guidelines relevant to the practice of pharmacists when supporting carers of older people in the use of their medicines was conducted. This enabled guidance to be brought together regarding the responsibilities of practitioners to patients and carers:

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preserving patient autonomy and confidentiality whilst providing information and support to carers to ensure optimal use of medicines. Stage 2 was a qualitative research study with 18 family carers, and 12 pharmacists and other health and social care professionals, in which data were collected in semi-structured, face-to-face, 1:1 interviews. In stage 2 carers’ understanding and experience of the role of pharmacy and other health professionals in assisting them in medication-related activities, and the perspectives of pharmacists and health/social care professionals on interpretation of legal and ethical frameworks in terms of supporting carers who assist older people with medicines was explored. Findings were combined to enable recommendations to be made for future policy and guidelines for practitioners.

Analysis highlighted particular challenges for pharmacists:

- Community pharmacists (unlike other health professionals) are likely to see the carer in the absence of the patient; in most other healthcare settings the patient will be present.
- Potential conflicts and gaps in the guidance for meeting responsibilities to patients and supporting carers. In particular, no guidance regarding procedures for obtaining consent was identified.
- Community pharmacists generally work from their own premises and do not have access to healthcare systems and records available to other practitioners, e.g. a carers’ register.
- Community pharmacists may not receive information about any changes to a patient’s medication, e.g. following hospital discharge.
- Carers may use several pharmacies and patients may have multiple carers.
- Pharmacists employ locum staff and assistants who may interact with carers.
- There was a general lack of awareness by patients and carers of the role of pharmacy services.

Key findings and some recommendations

As people who help others with medicines do not always see themselves as carers, a definition should be inclusive of all who provide assistance with medicines:

- **A definition of carer** is required that works for all health professionals who prescribe, advise on and/or supply medicines. A starting point might be to identify “a person who assists someone else with their medicines in any way”.

Pharmacists and other practitioners will not always know who helps a patient with medicines. Identification protocols for carers were not in place in pharmacies. Many people may assist with medicines and require information and support, but may not be named in any carers’ register. An agreed method of identifying carers is required, perhaps by formulating triage questions. Pharmacies could collaborate with GP practices, where systems and approaches to identify carers are also being developed.

The interview data showed that prior consent was not being obtained routinely from patients to share information with carers in community practice. Policy guidance does not cover how or when pharmacists should obtain or record consent.

- **Further research is needed to develop feasible methods and a suitable tool for pharmacists to obtain prior consent to share information when the patient is not present.**

There were no systematic procedures for recording carer status, although GP surgeries do have carers’ registers. Over time, an older person’s health needs, and their medication, may change. The help they receive from carers may also change, and different people may become involved.

- **Both community pharmacy patient records and hospital systems could add a field for recording carer status** (to include a carer with medicines responsibility) and this could also be recorded on e-discharge and paper discharge forms along with consent information. This information should be shared with healthcare professionals in primary and secondary care. Further research could consider how this information can be included in the Summary Care Record (with all healthcare professionals able to both read and write to it).

Policy guidance does not address the ethical issues that supporting carers can present to pharmacists, or how to involve carers when there might be conflicting priorities.

- **Further research is needed to develop specific policy, guidance and training that will facilitate discussion of potential dilemmas and courses of action.**

**Learning Points:**

- People who assist others with their medicines are a distinctive group who often provide important help, who may or may not have other caring responsibilities and/or see themselves as carers.
- For health professionals, there can be difficulties in identifying people who provide assistance with medicines, and conflicts of interest in terms of providing them with information and support, whilst preserving confidentiality of information about medicines and promoting autonomy for older people regarding their use of medicines.
- More guidance for health professionals is needed to enable them to be proactive in developing systems to identify people who provide assistance with medicines, and to ensure workable procedures are in place to provide appropriate support.

**References:**


Regular medicine reviews encouraged for older patients

Polypharmacy is common in older people, with many people being prescribed 10 or 20 or more medicines. However, drug testing is usually carried out in isolation, rather than in combination with other drugs, and this can lead to potentially harmful interactions.

Patients who take more than 10 medications are therefore being encouraged to have regular medicine reviews with their pharmacist or GP, which could improve patient care, cut waste and save the NHS money.

Medication reviews will also enable pharmacists and GPs to check how the patient is managing in terms of adherence, and whether changes to prescriptions, timings and types of medication could help patients get the best from their medicines.

To find out more please visit... https://www.bbc.co.uk/news/health-47077553

Transitions of care and shared decision making should be safety priorities

In response to a recent NHS Improvement survey, the Royal Pharmaceutical Society (RPS) has identified that transitions of care and shared decision making should be safety priorities in terms of medicines, whereas anticoagulants should be the lowest priority and that the number one focus should be frail older people.

The RPS also highlighted the need for improved communication between health and care settings, and a single universal system of medication records, and emphasised that meaningful medication reviews should be carried out with people taking high-risk medication and more than eight medicines.

The survey was launched by NHS Improvement in advance of the launch of the national Medicines Safety Programme in April 2019.


Deprescribing in older patients with cancer could improve quality of life

A study using data from over 150,000 patients has found that preventative drugs are commonly overprescribed in older people with terminal cancer, and that deprescribing could improve the quality of life for these patients.

52% of the study participants were taking ten or more medicines, including antihypertensives, statins, and oral antidiabetics, which were frequently continued until the final month of life.

These drugs may have “limited clinical benefit near the end of life”, and deprescribing could help to reduce side effects and improve the quality of the final months of life for this group.

To find out more please visit... https://www.pharmaceutical-journal.com/news-and-analysis/news/older-people-with-terminal-cancer-overprescribed-preventative-drugs/20206338.article
Digital health and care congress 2019
22nd – 23rd May 2019
This annual event brings together leading NHS and social care professionals interested in how data and technology can improve the health and wellbeing of patients and the quality and efficiency of services. Join NHS and social care teams, innovators, researchers and policy-makers for two days packed full of interesting content and innovative projects. You’ll discover the latest national developments in digital health, design your own congress experience with a choice of deep-dive breakout sessions and have the chance to network with more than 400 delegates working in this area.
To find out more, please visit https://www.kingsfund.org.uk/events/digital-health-and-care-congress-2019

Improving Continence in Older People 2019
13th September 2019
Bladder and bowel problems are common but neglected areas of Geriatric medicine practice. This meeting will focus on providing comprehensive, up to date information and practical tips from leading experts in the field. The meeting will be of benefit to all healthcare professionals involved in geriatric medicine and healthcare of older people.
To find out more, please visit https://www.bgs.org.uk/events/improving-continence-in-older-people-2019

NHS Health and Care Innovation Expo
4th – 5th September 2019
Registration is now open for Health and Care Innovation Expo – the biggest NHS-led event of the year. Focused on the NHS Long Term Plan, the conference and exhibition unites more NHS, local government and social care leaders than any other health and care event, with a huge range of speakers and activities across the two days.
To find out more, please visit https://www.england.nhs.uk/expo/

20th International Conference on Falls and Postural Stability
20th September 2019
This annual event is widely recognised as the leading meeting in the UK for clinicians working in the field of falls and mobility medicine. The day provides a forum for scientific discussion and clinical updates and enables a multidisciplinary audience of over 200 professionals to share their experiences of best clinical practice.
To find out more, please visit https://www.bgs.org.uk/events/20th-international-conference-on-falls-and-postural-stability

Care Show 2019
9th – 10th October 2019
The Care Show is the UK’s largest completely care focused event, attracting 4,800+ professionals from across the UK. The Care Show provides expert-led CPD accredited conference sessions, hands-on training, latest solutions and networking opportunities to support those connected to and responsible for providing excellent care for others. You’ll learn and see more in two days at The Care Show than you would in months from your office.
To find out more, please visit https://www.careshow.co.uk/
Improving medication adherence: A tailored ‘Locks and Keys’ approach

Deborah Patton is part of the Primary Care Research Group at the School of Pharmacy, Queen’s University Belfast. Deborah has a PhD in pharmacy practice in the area of medication adherence and is currently working on the ‘Solutions to Medications Adherence Problems’ (S-MAP) study. This study is pilot testing a novel tailored community pharmacy intervention (service) that aims to improve older patients’ adherence to multiple medicines. She also continues to practise as a pharmacist in the community setting.

Why do we need to improve medication adherence?
Despite over 40 years of research into the problem of non-adherence, a recent study conducted in Ireland found that “31% of older patients with multimorbidity were non-adherent to their medication” (Kim et al., 2018). The consequences of non-adherence are significant, including poor disease control, medicines wastage, increased healthcare utilisation and mortality. Ultimately, this has major financial implications for healthcare systems, with estimated global annual costs of US$270 billion (Aitken & Gorokhovich, 2012). In England, it has been predicted that an improvement in adherence across just five chronic diseases (including asthma and cardiovascular disease) could save the NHS £500 million per year (Trueman et al., 2011). The global scale of non-adherence has previously been compared to a major disease epidemic and so requires ongoing attention and commitment from policy makers, healthcare professionals and researchers alike (Sabate, 2003).

What has been done to address non-adherence?
Whilst there has been a large number of strategies, known as interventions, designed to improve adherence, the majority have shown only modest improvements in adherence and clinical outcomes (e.g. hospitalisations) for older patients (Nieuwlaat et al., 2014; Conn et al., 2017). Hence, the search for more effective interventions or solutions continues, with research increasingly focused on the use of psychological and behaviour change theories to help understand how interventions work (Easthall & Barnett, 2017; Patton et al., 2018).

Previous interventions have focused largely on educational strategies to enhance patients’ knowledge but education alone has been deemed ineffective (Nieuwlaat et al., 2014). Other interventions that have received significant attention in recent years include monitored dosage systems and technology-based solutions (e.g. reminder applications) (Royal Pharmaceutical Society, 2013; Santo et al., 2016). Although these types of solutions may be beneficial for patients who have issues with forgetting and organisation, they will not address other important barriers to adherence such as patients’ concerns or low motivation (Patton et al., 2018). It has been suggested that individually tailored interventions with ongoing contact with healthcare professionals could be more effective but only a limited number of such interventions have been tested to-date (Conn & Ruppar, 2017).

What should healthcare professionals be doing in practice?
Until more evidence on the most effective combination of adherence solutions becomes available, it seems reasonable to recommend the adoption of a tailored approach (Alleman et al., 2016; Easthall & Barnett, 2017; Patton et al., 2018). To achieve this, healthcare professionals need to move away from simple patient education or reminder strategies (e.g. monitored dosage systems) as first line approaches. Instead, adherence solutions should only be selected following an initial assessment of each individual patient’s needs. Medication non-adherence, like other health-related behaviours such as smoking and physical inactivity, is an extremely difficult behaviour to change. The provision of tailored

continued on next page
‘medication adherence support’ by healthcare professionals is therefore a complex clinical behaviour in itself, which can be broken down into five key steps as illustrated in Figure 1.

The first step requires identification of patients requiring support. However, given that healthcare professionals have provided the advice to take medications, it is not surprising that patients are often reluctant to admit problems (Nieuwlaat et al., 2014). A proactive approach and appropriate training for healthcare professionals is essential to supporting the identification of non-adherent patients. Information technology can support this process, for example, it can be used to identify patients who are under-ordering repeat medications. Engaging in conversations with older people about medicines use at every possible encounter, using a non-confrontational approach, could also facilitate disclosures of non-adherence. Given the pressures currently faced in the NHS, **patients at greatest risk of non-adherence should be prioritised.** For example, healthcare professionals should target patients with: multiple clinical conditions, large quantities of medications, frailty, frequent hospital readmissions, uncontrolled conditions or frequent exacerbations.

Following identification of non-adherent patients, the next step should be an assessment of the underlying reasons for non-adherence. Focus group research, conducted with older people in Northern Ireland (NI) (Patton et al., 2018), has highlighted a wide range of reasons for non-adherence in this group including:

- Ineffective routines
- Misinformed beliefs/concerns about medications
- Difficulties with accessing /organising medications
- Lack of motivation or inappropriate prioritisation of medications
- Forgetfulness
- Lack of social support
- Inadequate medication knowledge

Step 3 of the process should then focus on matching adherence solutions to identified problems using a ‘locks and keys’ approach (see “How does a tailored ‘locks and keys’ approach work?” section). To maximise effectiveness, patients and healthcare professionals should select solutions together, focusing on those that the patient is most likely to engage with or that could have the greatest impact (Step 4). The patient’s adherence should then be monitored and solutions reviewed over time to ensure ongoing effectiveness (Step 5).

**How does a tailored ‘locks and keys’ approach work?**
As advocated by Allemann et al. (2016), a ‘locks and keys’ approach can be used to address the issue of non-adherence and help tailor solutions to individual patients’ needs. Using this analogy, **adherence problems can be seen as the ‘Locks’ to which solutions, or ‘Keys’, need to be found.** Some examples of ‘Locks’ and ‘Keys’ are listed in Table 1. These have been identified from research led by Queen’s University Belfast that made use of psychological theory to better understand why older patients are non-adherent, and identify the most appropriate solutions (Patton et al., 2018).

**What is the future of adherence research?**
Using the ‘lock and key’ analogy, a ‘master key’-type solution, whereby an individual solution addresses multiple adherence problems, would be the ideal solution. However, given the wide range of underlying factors, it is unclear whether such a solution will ever be found. Instead, it is more likely that a combination

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*Figure 1: Five steps involved in providing tailored ‘medication adherence support’ to older patients*
of solutions will become the ‘master key’ or gold standard approach in improving adherence.

Research has identified that there is a need for systematically designed adherence interventions that clearly specify the key ‘active ingredients’ and can be tailored to patient’s needs. To address this evidence gap, as part of ongoing research led by Queen’s University Belfast, a novel complex intervention has been systematically designed using the latest evidence from the literature, focus groups with older people and with input from health psychologists and pharmacists (Patton et al., 2018). This intervention, known as the S-MAP (Solutions to Medication Adherence Problems) intervention, has been designed using the ‘locks and keys’ tailoring approach.

To date, the intervention has undergone small-scale (feasibility) testing in two community pharmacies in Northern Ireland (https://doi.org/10.1186/ISRCTN17066504) and has been refined based on the feedback from patients and pharmacists. Refinements have included the development of an electronic adherence assessment tool that guides the intervention tailoring process (via a web application accessed using iPads). The S-MAP intervention is currently undergoing pilot testing in 12 community pharmacies in Northern Ireland and London (https://doi.org/10.1186/ISRCTN73831533) in advance of a larger randomised controlled trial to establish the impact on patients’ medication adherence, quality of life and hospital admissions.

Learning Points

- Patients at greatest risk of non-adherence should be prioritised for support.
- Adherence problems can be seen as ‘Locks’ to which solutions, or ‘Keys’, need to be found.
- Adherence solutions should only be selected following an assessment of the underlying reasons for non-adherence.

Table 1: Examples of adherence problems (‘Locks’) and solutions (‘Keys’) identified from research with older people (Patton et al., 2018)

<table>
<thead>
<tr>
<th>Examples of adherence problems (‘Locks’)</th>
<th>Examples of potential adherence solutions (‘Keys’)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ineffective routines</td>
<td>Link to other established routines (e.g. teeth brushing, meals)</td>
</tr>
<tr>
<td>Difficulties ordering medications</td>
<td>Self-monitoring strategies (e.g. calendar, diary)</td>
</tr>
<tr>
<td>Forgetfulness</td>
<td>Storage of medicines in a visible location</td>
</tr>
<tr>
<td>Regimen too complex</td>
<td>Alarm clock/mobile phone reminder</td>
</tr>
<tr>
<td>Concerns about side effects</td>
<td>Reminder from family/friends</td>
</tr>
<tr>
<td>Low motivation</td>
<td>Pill reminder box/Monitoring Dosage System</td>
</tr>
</tbody>
</table>

References:


Osteoporotic fractures are a significant health issue in the ageing population, resulting in increased morbidity, increased mortality and significant financial burden on the NHS. People aged 65 years and older have the highest risk of falling, with 30% of people older than 65 and 50% of people older than 80 falling at least once a year. The human cost of falling includes distress, pain, injury, loss of confidence, loss of independence and mortality. Falls are estimated to cost the NHS more than £2.3 billion per year (NICE, 2013).

Older patients are at increased risk of falls and fracture due to a variety of factors e.g. multiple co-morbidities, cognitive impairment, sensory deficits, increased frailty and medication use. The National Institute for Health and Care Excellence (NICE) advises that all patients at risk of falling should receive an individualised, multifactorial assessment from the multidisciplinary team. However, all falls cannot be prevented without unacceptable restrictions to patients’ independence, dignity and privacy but can be reduced by up to 30% through multifactorial assessments and interventions. No risk factor is as preventable or reversible as medication use (Leipzig et al, 1999).

Falls can be caused by almost any drug that acts on the brain or circulation, with the highest risk from antidepressants, antipsychotics and hypnotics (Woolcott et al, 2009). The main drug-related mechanisms of falls are hypotension, decreased heart rate or sedation and impaired cognition but medication can often have multiple adverse effects linked to falls, for example antipsychotics can cause drowsiness as well as orthostatic hypotension due to having some alpha receptor blocking activity.

Karen Miller is a Consultant Pharmacist for Older People and Kevin Madden is a Specialist Case Management Pharmacist, both working as part of the Medicines Optimisation in Older People Team in the South Eastern Trust in Northern Ireland.

Karen Miller has a PhD in Pharmacy and has worked as a medicines information and clinical pharmacist for twenty-five years before taking up post as a consultant pharmacist for older people two years ago. Kevin has an MSc in Clinical Pharmacy and has been working as a clinical pharmacist for over 10 years with a special interest in the care of older patients, falls and fracture prevention and frailty.

There is also increasing awareness of the potential harm of medications with anticholinergic activity as this has been linked to serious negative outcomes for patients.

**Figure 1: Odds Ratios for medication types and fall risk in older people.**
older patients, including increased risk of falls and higher mortality rates (Fox et al., 2011; Wilson et al., 2011). These risks are cumulative based on the number of anticholinergic drugs taken and the strength of each drug’s anticholinergic effect. Various scoring tools have been developed to score and assess anticholinergic effects including the Anticholinergic Burden Scale (ACB) and Anticholinergic Effect on Cognition (AEC) (Hanlon et al., 1992; Bishara et al., 2016).

Medicines review and optimisation by a pharmacist can be a key intervention in reducing or preventing fractures and falls to save lives and decrease disability. Studies have shown that a medication review significantly decreases the number of falls and that a reduced number of medications are correlated with a decreased number of falls (Haumschild et al., 2003; Zermansky et al., 2006).

In 2017, the South Eastern Trust in Northern Ireland introduced a consultant-led medicines optimisation for older people service in its Intermediate Care (IC) rehabilitation service, providing a targeted, preventative approach to falls and fractures. The service team comprises a consultant pharmacist, clinical pharmacists and a clinical technician.

Medicines review and optimisation significantly decreases the number of falls and that a reduced number of medications are correlated with a decreased number of falls (Haumschild et al., 2003; Zermansky et al., 2006).

Structured medicine reviews assessed the medicines appropriateness index (MAI), falls risk as well as the anticholinergic burden (ACB) and effect on cognition (AEC) of individual drugs (Hanlon et al., 1992; Rudolph et al., 2008). Clinical interventions were recorded and Eadon graded (Eadon is a scale from 1 to 6 with ≥4 indicating improvement in standard and quality of care) (Eadon, 1992). The SchARR model was also used to calculate net cost savings due to prevention of adverse drug events (Kamon et al., 2008).

Data were collected for 48 patients (aged 84 ± 8.1 years; range 67 to 97 years). Eighty-six percent of patients were admitted with a history of falls whilst 47% were admitted with a fragility fracture as a result of a fall. Risk assessments for those with a fracture or history of falls indicated bone protective treatment required in 69% of patients, with 31% needing a follow up bone mineral density scan. For falls patients with no fracture, 33% needed referral for BMD assessment and 67% required bone protective medication.

Decisions regarding bone protective medication were made for all patients reviewed, including starting, stopping or that no medication was required or contraindicated. The most common pharmacist interventions were initiating Vitamin D replacement and stopping calcium supplementation or assessing that it was not required due to dietary intake (See Figure 3).

There was no change to the patient’s overall drug burden on completion of review as this demonstrated the net effect of starting medication for bone protection along with stopping inappropriate

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**Figure 2: Tailoring Treatment for Fracture Prevention.**

The team provides a specialised Fracture prevention review using bone health assessment (e.g. FRAX), dietary calcium intakes and Vitamin D assessments (see Figure 2). The team also carries out structured medicine reviews for all patients admitted with a fall to assess medicine appropriateness, falls risk and any anticholinergic burden or effect on cognition. The service ensures that patients are on the appropriate level of bone protection to reduce fractures and that unnecessary medication is avoided to reduce potential adverse reactions or side effects and rational use of resources.

Where the assessment identified medications that could be contributing to falls, the pharmacist reviewed these with a medical consultant to create a plan of how to reduce this risk through stopping, reducing or changing the relevant medications. Treatment options were discussed with patients before the IC pharmacist prescribed or altered bone protective medication or made onward referral to or discussed options with other relevant services, such as DEXA scans and specialist osteoporosis services. This review process was patient-centred, and patients were given information on any proposed changes to their treatment and were assisted and supported to make informed choices regarding their options.

In 2018, the team performed a study aiming to determine the impact of the pharmacy team in optimising bone protective medication and in reducing falls risk. Over three months, demographic, clinical and drug related data were collected on all patients admitted into SEHSCT IC beds due to a fall or fracture, or with a previous history of the same.
The mean number of interventions per patient was 3.5 (range 0-8) with 99% of interventions EADON Grade 4 or higher. Applying the SchARR model to these interventions demonstrated a potential saving of £500,640 – £826,512 per year.

**Conclusion**

The introduction of the intermediate care pharmacy team has had a positive impact in falls and fracture prevention and in delivering a service to meet the Medicines Optimisation Quality Framework standards. A medication review by a pharmacist improves medication appropriateness and ensures that fracture prevention treatments are optimised in patients who have had a fracture or are at risk of fracture due to their falls risk.

**Learning points**

- Osteoporotic fractures are a significant health issue in the ageing population, resulting in increased morbidity, mortality and significant financial burden on the NHS.

- No risk factor for falls is as preventable or reversible as medication use.

- Medication can have multiple effects linked to falls e.g. hypotension and sedation, as well as anticholinergic effects that can impair cognition.
Older people are on average prescribed eight different medicines, but research has highlighted that older people typically take only about half their prescribed doses. Several Cochrane reviews have summarised evidence on the effectiveness of various approaches that are aimed at helping older people take their medication safely to attain the desired benefits.

A large Cochrane review of 75 systematic reviews explored safe and effective medicine. Some approaches that may improve medicines use include: medicines self-monitoring, enhanced supports from family and friends, self-management programmes (people deciding when to take their medication for symptom relief), more simplified dosing regimens, and direct involvement of pharmacists for medication reviews.

Reminder packaging that adds the “date and/or time of the week” for a medication to be taken to the packaging has been found to be useful. A Cochrane review conducted in 2011 included 12 studies involving over two thousand people, and showed that reminder packaging increased the percentage of pills taken by 11% although the effect was small. Some evidence also suggests that the use of reminder packaging may improve clinical outcomes such as diastolic blood pressure and glycated haemoglobin levels.

Two Cochrane reviews summarised evidence regarding the use of mobile phone message reminders to remind patients to take their medication in both primary and secondary prevention levels. Primary prevention aims to prevent disease before it ever occurs, and secondary prevention aims to reduce the impact of disease that already exists. One review found that 86% of the reviewed studies reported beneficial effect of a mobile phone text message when compared with people who did not receive text messages in secondary prevention of cardiovascular disease. For primary prevention level, the evidence suggests that mobile phone messages may help people to take their medication. However, the reviewed studies were limited by small sample size, and diverse research methods and definitions that may affect the quality of the evidence.

Multimedia education programs about medications may be used alongside usual care provided by health providers. A Cochrane review summarised evidence from 24 studies involving 8,000 people, but concluded that there was insufficient evidence to recommend it as a replacement for written education or education by health professionals.

Education when used alone can improve knowledge but not drug adherence. Multimedia education could be used to replace detailed education given by a health provider only when such professional service is not available.

Taking too many medicines (polypharmacy) can sometimes cause harm. Two Cochrane reviews including over 10 thousand and 28 thousand older people evaluated over 30 strategies to optimise the use of multiple drug prescription for the elderly. The strategies included medication review, multidisciplinary case-conferencing, education for health care professionals, and multi-faceted pharmaceutical-care based approach. These strategies may improve medication appropriateness and reduce errors in prescriptions.

Taken together, multiple Cochrane reviews have reviewed various approaches to enhance medication safety in older adults. Enhanced support from family and friends, simplified dosing regimens, medication reviews, reminder packaging, and mobile phone message reminders have been shown to be effective in improving drug adherence and minimising errors in prescriptions.

Bibliography:


Dementia is recognised as a global public health priority, due to its rising prevalence and wide-ranging impact. The majority of people with dementia (PwD) will suffer other co-morbidities, commonly coronary heart disease, depression and diabetes (Barnett et al., 2012). This can result in patients being prescribed multiple medicines (polypharmacy), leading to complex medication regimens that may be difficult for PwD to manage. People receiving polypharmacy are also at greater risk of receiving drugs or combinations of drugs that may be considered potentially inappropriate.

The majority of PwD in the United Kingdom live at home and are managed within the primary healthcare setting. Earlier work conducted by Dr Barry as part of her doctoral research revealed that community pharmacists, one of the most accessible members of the primary healthcare team, frequently provided pharmaceutical care to PwD and their carers (Barry et al., 2013). The majority of pharmacists surveyed (n=182) reported that they tended to deal with family carers of PwD most often, and the most commonly encountered queries about medication related to the use of compliance aids, patients’ non-adherence with medication, and starting new medications (Barry et al., 2013). However, little was known about what the potential medicines management issues might be for these patients. It was hypothesised that inherent difficulties with cognition and communication affecting PwD may compound the challenges faced by them in managing complex medication regimens. In addition, behavioural and psychological symptoms of dementia may add to difficulties with medicines management and prescribing appropriately for these patients.

Dr Barry and colleagues conducted a systematic review of the literature to assess the effectiveness of medicines management interventions for PwD. The review highlighted a limited number of studies (n=3) examining medicines management for PwD, particularly community-dwelling patients (McGrattan et al., 2017). The review concluded that there was a need for well-designed interventions aiming to improve medicines management, which should take a holistic and multidisciplinary approach.

Over the last few years, Dr Barry has been working on a three-phase project to develop an intervention to improve medicines management for PwD in primary care. Initially a pharmacopoeidemiological study was conducted to explore prescribing trends and prescribing appropriateness for community-dwelling PwD in Northern Ireland (n=6,826). It was found that most patients (81%) were prescribed polypharmacy (defined as ≥4 regular medicines) and 64% of patients were receiving potentially inappropriate prescribing (PIP). The use of anticholinergic medicines, which can exacerbate cognitive impairment, was found to be the most common instance of PIP amongst the sample (Barry et al., 2016). This work has highlighted the need for rational prescribing for PwD which may be optimised by regular medication review.

Dr Barry has since conducted face-to-face interviews (n=63) with key stakeholders (PwD, carers, general practitioners and community pharmacists) to explore the perspectives of each group in relation to medicines management. While the PwD and carers who participated did not reveal any issues with medicine-taking or adherence at the time of the interview, most had strategies in place (e.g. weekly compliance aid) to assist them with managing their medicines. Carers were found to play a critical role in supporting PwD with medicines management. Healthcare professionals were particularly concerned about patients’ adherence to medications, and felt that conducting medication review was important for these patients but struggled to find the time to do so (Barry et al., 2018). All of the data collected from these studies has been triangulated, and used to develop a theory-based intervention to improve medicines management for PwD (Barry et al., 2019), which is currently undergoing feasibility testing in primary care.

Learning Points:

- People with dementia (PwD) face unique challenges with medicines management compared with the general older population, yet there is a lack of interventions to improve medicines management which have been developed for these patients.
- PwD are likely to be prescribed many different drugs and to receive potentially inappropriate prescribing. The use of anticholinergic medications is of particular concern. Regular and thorough medication review will ensure that medicines-related issues are addressed for PwD.
- Carers of PwD play a key role in the medicines management process; carer involvement is key to future intervention development.

References:

Spotlight on...

Dr Heather E Barry
Lecturer in Pharmacy Practice, School of Pharmacy, Queen’s University Belfast

What is your current position and what was the career path that took you there?

I am currently Lecturer in Pharmacy Practice at the School of Pharmacy in Queen’s University Belfast (QUB). I undertook my undergraduate MPharm degree at QUB. Following completion of my pre-registration training in community pharmacy with Boots the Chemist I spent the next year working for the company across Northern Ireland and in London, firstly as a relief pharmacist and then as a store manager. I returned to QUB to undertake a PhD; my doctoral research focused on the assessment and management of pain in people with dementia. I worked as a postdoctoral researcher both at the University of Exeter and at QUB, before being appointed to my current role in 2017.

What challenges do you face in your current position and which has been the greatest one?

One of my main goals in my current position is to establish myself as an independent researcher with an international reputation and part of that is to secure funding as a Principal Investigator. This has definitely been a steep learning curve in terms of writing grants, working with large research teams and learning to deal with rejection! Being new to the role, it has been challenging learning to strike a balance between teaching and research, although I would say this seems to become easier each academic year. On a personal level, I am continually striving to find an appropriate work-life balance. This is a constant juggle between wanting to set a good example of a strong work ethic to my daughter whilst also being able to include her in my future career choices.

In your opinion, what are the top three issues affecting the care of older people?

Rational prescribing for older people, particularly in light of growing multimorbidity is a continual concern. So too is the increasing prevalence of conditions such as dementia and frailty, and how these may affect management of other co-morbidities. Fundamentally, we need to think about how primary care services are organised and provided in order to address the medical needs of these complex older patients.

What changes in elderly care do you anticipate in the next few years?

I think we are going to see even greater recognition, and use, of the multidisciplinary primary healthcare team. The last few years have seen great changes within the primary care landscape, especially with the introduction of general practice-based pharmacist pilot initiatives across the UK. In the coming years we need to consolidate the workforce and ensure that they have the relevant skills and training in order to provide holistic and person-centred care to our older patient populations.

If you hadn’t become a researcher what might you have done?

I was always interested in pursuing a career in the medical field – as a child I harboured an ambition to be a paediatrician. Despite science subjects not being my strongest at school, I was determined to study medicine or pharmacy, and was swayed by the diverse range of career options offered by a pharmacy degree. If I hadn’t decided to focus on research I think I may have explored a career in medical writing, as this always appealed to me as a way to fuse my key interests.

What experience has influenced your career the most?

My first post-doctoral position at the University of Exeter really helped me to see myself having a future career in research and academia. I worked on an NIH-funded project in collaboration with the University of Cambridge. This experience had a profound effect on me – it provided me with experience of working as part of a large multidisciplinary research team; I found that my confidence in my abilities grew as I discovered where my research interests lay and what I enjoyed doing. It was also refreshing to work in a different institution and be introduced to alternative ways of working.

What advice would you give to someone contemplating following in your footsteps?

Definitely to take opportunities as they present themselves – you never know what new doors may be opened to you in doing so. Last summer I had the opportunity to spend two months at McMaster University in Canada as a Visiting Scholar. Whilst this meant spending a significant period of time away from home and my family, I really did value the time away in another country and at another institution to broaden my thinking and academic network.

Where do you go for advice and information?

I have been very fortunate to have had a number of mentors throughout my career to date, and to whom I turn for guidance. In particular, my former PhD supervisor and current line manager, Professor Carmel Hughes, has been a great support to me, and is a continual source of inspiration as a successful and respected senior academic.

Who would you most like to work with?

I met some amazing researchers during my trip to Canada last year, particularly Professors Dee Mangin and Colleen Maxwell – there are plans in place to formalise these working relationships over the next number of months. I would also like to work in the future with Dr Andrew Clegg, a well-known academic geriatrician in the field of frailty.

What do you enjoy doing when you are not working?

As mummy to a bright, curious and energetic three-year-old, my time at home is never dull! I love spending time outside, walking or running on the beach near to where I grew up on the shores of Belfast lough. In the evening I can be found relaxing with my husband, a G&T and a good Netflix documentary!

What do you do in a typical working day?

No two days are ever the same, and I love the variety that my job brings. My main focus is my research – this involves writing grant applications for new projects, drafting papers for publication in academic journals, preparing presentations for conferences, and attending meetings related to ongoing projects. I also supervise a number of PhD and MSc students. I am involved in the delivery of teaching to undergraduate pharmacy students at all stages of the degree course. I also undertake a number of other administrative tasks and outreach activities within the School of Pharmacy, such as sitting on the Research Ethics Committee and attending careers fairs. I am an active STEM ambassador, visiting local Schools to demonstrate the value of STEM subjects in a pharmacy career.

If you were stranded on a desert island what would be your one luxury?

My bed and pillow!
In our next issue of Innov-age we will be looking at Arthritis and Osteoporosis.

Arthritis and osteoporosis are both common conditions and occur frequently in older people as they age. In the UK, there are over 3 million people affected by osteoporosis, and over 10 million people affected by arthritis. Both of these conditions can be debilitating and have a major impact on the quality of life for individuals. However, both conditions can be managed through a variety of methods, including exercise, physical therapy, and medications.