Medicines Optimisation and Patient Safety NIHR CLAHRC Learning Event, held 16th January 2017

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Introduction

As part of a national CLAHRC collaboration, NIHR CLAHRC NWL invited project teams from around England to participate in a national learning event to share experience and learn from each other. Teams from the West Midlands, West of England and across London contributed. Pharmacists, multi-disciplinary teams and researchers were asked to focus their presentations on how to accelerate learning for other teams to benefit, particularly those who are starting out. Ganesh Sathyamoorthy, Assistant Director for Partnerships and Business Development, NIHR CLAHRC NWL, began by encouraging the development of a cross-CLAHRC collaboration to share learning. Professor Finbarr Martin, Academic Theme Lead for Frailty, NIHR CLAHRC NWL then chaired the event. He set the context at the start of the day, reminding delegates that the number of chronic conditions and medicines prescribed increases with age. Co-morbidities, use of multiple medicines and socio-economic status as well as age are part of a complex picture, with patients in lower socio-economic classes more likely to be living with multiple conditions for longer and surviving them less well than higher socio-economic classes. Predicting outcomes of the options available to patients is also complicated and the potential adverse effects from treatments must be considered and weighed against other factors so that patients can decide if a potential treatment is worthwhile.

This summary of proceedings highlights the key aims of all the projects presented at the event i.e. the successes and challenges encountered, what had worked well, what had not, and important research findings. Our intention is that readers will find this a useful summary and that they will visit the NIHR CLAHRC website to access the full presentations themselves: http://clahrc-northwestlondon.nihr.ac.uk/events/past/medicinesoptimisationpatientsafetylearningevent .

1. A Medicines Optimisation Journey across a timeline in North West London: 2009-2016

Vanessa Marvin, Associate Chief Pharmacist at the Chelsea & Westminster Hospital (CWH) and NIHR CLAHRC NWL, led a presentation on a journey that began with the aim of improving medicines management and medicines reconciliation, moving through to the development and implementation of medication review definitions and tools and the introduction of an innovative patient-held record of medicines. CWH, Northwick Park, Hammersmith, St Mary's, Hillingdon, West Middlesex Hospitals have been involved in this journey.

The early focus was on medicines management and medicines reconciliation. It was clear that insufficient medicines reconciliation on admission to hospital meant that confidence in medicines reconciliation at discharge was impossible. Unanticipated, substantial, unmet need existed around communication and stakeholder involvement across both acute and primary care and with patients and carers. Improved cross-boundary communication, relationship building and establishing necessary structures enabled experimentation and learning, which was crucial to securing sufficient focus on medicines optimisation. An emphasis was placed on the importance of gaining an in-depth understanding of the patient journey in order to facilitate accurate recording of medicines at discharge.[1] The team improved communication with inpatients about possible side-effects of medicines and assessed medicine related problems encountered after discharge from hospital.[2,3,4] An improvement in medicines reconciliation at discharge was achieved raising the average from 20% in October 2011 to 60% by January 2013. An award winning intervention (Medicines at Discharge – or M@D) radically improved documentation to support accurate recording of drug history at patient admission.

Dr Marvin's team moved on to describe the introduction and diffusion of structured medication review across five North West London hospitals, all of whom described medicines reconciliation challenges and collaborated on an initiative to improve prescribing and medication review for elderly people (ImPE project). A subsequent project focused on review of medicines in acute care (ReMAC). A structured medication review tool based on the Gallagher et al (Screening Tool of Older Persons potentially inappropriate Prescriptions, 2008) was developed and used.[5] More than 3,800 patient medication records were reviewed between July 2015 and June 2016, with medicines being stopped or reduced in 65% of patients. Updates to e-prescribing templates supported improved documentation and clearer communication. Moreover, two evidence-based working definitions were agreed by consensus: 'interim medication review' and 'comprehensive medication review'.

Factors contributing to success included a rigorous analysis of pharmacy processes, including surveys and ongoing induction, training and mentoring of all healthcare professionals. This contributed to sustained culture change. Understanding processes, context and grappling with challenges relating to documentation and the role of different clinicians was key. With one lead hospital and four more hospitals working collaboratively, diffusion of learning, clinical leadership and quality improvement support was possible. Having pharmacists join doctors on ward rounds with the purpose of medication review improved the number of reviews carried out.[6] Finally, it became clear that including medication review as a subject in the formal and informal education of clinicians is important for the success of this journey.[7,8]

2. My Medication Passport (MMP)

Susan Barber, Improvement Science Manager, NIHR 'NIHR CLAHRC NWL, described the MMP story to date. MMP is a passport size booklet that features a list of the patient's current medicines, any medicines that the patient cannot take with reasons, compliance aid use, notes about changes to medicines, relevant information about key clinicians and blank pages to make notes about anything else, for example regular clinics, illnesses, vaccinations or screening.

MMP helped to bridge some specific challenges that have been encountered in the NIHR CLAHRC NWL medicines optimisation journey. For example, there is no comprehensive patient medication record available, which can lead to potential inaccuracies when making prescribing decisions. Patients and carers working with NIHR CLAHRC NWL were keen to have a patient-held record of medicines, specifically to help them to keep track and support conversations about their care. They provided the idea and worked with pharmacists and other health care professionals to develop, trial and evaluate MMP. Evaluation demonstrated value in supporting patients in their communications with clinicians, families and informal carers. Most patients indicated that using MMP in conversations improved their confidence to ask questions, and to make clear points about their medicines, appointments, and needs,[9] including in a paediatric setting.[10,11,12] Subsequently, parents/carers of disabled children surveyed at the Chelsea & Westminster Hospital were positive about MMP, with some suggestions for improvement. To date, more than 150,000 hand-held MMPs are in circulation with 10,000 app downloads.

3. Quality Improvement Methods

The NIHR CLAHRC NWL group were keen to emphasise the use and value of Quality Improvement methods throughout their journey. These included the development of aims and interventions (Action Effect Diagrams), fully understanding and navigating the processes to be changed, identifying the prospective process desired (Process Mapping), and making small tests of change through 'Plan Do Study Act' (PDSA) cycles. Patient and public engagement is central to the NIHR CLAHRC NWL approach, which included facilitating stakeholder engagement through stakeholder mapping and communication planning. Guiding patient engagement and involvement in developing, implementing and evaluating the programme was central to success, as was considering the extent to which a cohesive team was being built, and what steps could be taken to ensure that the project aims became part of the ongoing working culture (Long-term success tool).

4. Deprescribing

Barry Jubraj and Nina Barnett, Consultant Pharmacist, Care of Older People, Northwick Park Hospital, London North West Hospitals Trust; Medicines Use and Safety Division, NHS Specialist Pharmacy Services presented a themed issue on deprescribing of the European Journal of Hospital Pharmacy,[13] which was an output of the NIHR CLAHRC medicines optimisation initiative. In a conversational presentation, they discussed deprescribing as a topic gaining increasing importance but with concerns around a lack of robust guidance, patient attitudes and a fear of medico-legal consequences. They signposted delegates to the themed issue containing articles ranging from reviews by international experts on the current problems surrounding deprescribing to a description of practical tools to support the process. A podcast by the editors introducing the themed issue can be found here: https://soundcloud.com/bmjpodcasts/deprescribing-a-special-issue-from ejhp?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+ejhp%2Fpodcasts+%28Latest+from+EJHP+podcasts%29 .

5. The Medicines Optimisation Pharmacy Service (MOPS): the impact of domiciliary medication review

Caroline Goh and Jennifer Butterfield from the Medicines Management Department, Central London Community Healthcare Trust (CLCH) presented their experiences of introducing medicines optimisation in two settings: domiciliary and care home medication review.

For the domiciliary review project, their intervention was aimed at house-bound patients over 75 years old taking 4 or more medicines and/or a `high risk' medicine. Face-to-face 'level 3' medicines reviews were conducted and the question "what are the patient's goals for medicines outcomes" put at the heart of each discussion. A care plan was then agreed with the patient and recommendations were made to the GP. A referral pathway

was developed and improved communication through MDT working. 1,799 interventions were made, with 23% involving advice on stopping medicines and 13% on starting medicines. The team saw a decline in non-elective hospital admissions and unused medication was returned for destruction. The initiative was cost-neutral, with positive patient feedback.

The initiative proved challenging initially, for example to set up and engage with GPs and multi-disciplinary teams and to access patient records. It was also essential to have access to the patient record before the intervention started. It was helpful to research whether or not access is possible to local specialist services if they exist. Meticulous planning and setting aside sufficient time was integral to working with the patient's GP and preparing home visits.

Next, for the 'Integrated Proactive Care Homes Project' where pharmacists were working in care homes, different methods were used to optimise medicines depending on the cohort. For example, residents recently discharged from the acute setting, new residents and residents at risk of falls were targeted for the intervention. There were 9,922 interventions from December 2013 – July 2016, with 27% including advice about stopping medicines and 17% on starting medicines. An evaluation comparing outcomes for 2014 and 2013 showed decreases in reported resident falls (35%), call-outs relating to falls (26%), A&E attendance (16%) and hospital admissions (4%). Other achievements included appropriately trained pharmacists working with care homes, better working relationships, upskilling of staff, improved patient safety and good feedback from GPs and patients. The initiative was cost-neutral with a positive impact on non-elective hospital admissions and falls.

It became clear that time is well spent getting to know individual care homes and understanding the skills of their staff before starting to plan interventions. A variety of communication styles and content of interventions needs to be tailored to individual needs of care homes. Challenges included gaining an awareness of how care homes operate, communication, access to relevant medical records and community specialist services.

6. Reviews: Predicting and assessing adverse drug reaction risk

Jennifer M. Stevenson, Clinical Pharmacy Research Fellow, Kings College London, presented her research entitled `Predicting medication related harm in older adults – a review of the validated models'. A case study identified two key questions: "is the patient journey predictable?" and "do we have adequate knowledge from the literature to predict risk of harm?"

Many tools and assessment structures may be of help, including Beers criteria, STOPP/START, MAI, and the Comprehensive Geriatric Assessment. The aim of the study was to identify validated medicine risk prediction models and assess the quality of them. Jennifer's quality assessment focused on four elements: (1) the development of the model or tool, (2) validation, (3) impact, (4) implementation. All papers in the review addressed development and validation issues but many neglected impact and implementation. Many papers also identified significant challenges especially in relation to how the assessment of adverse drug reactions and adverse drug events may be approached. Jennifer reported that there is a paucity of evidence available to underpin our knowledge of the impact of risk prediction models and their implementation.

7. Interventions to reduce problematic polypharmacy or inappropriate prescribing: an overview of an ongoing scoping review.

Elaine O'Connell Francischetto (NIHR CLAHRC West Midlands, Chronic Disease Theme, Institute of Applied Health Research, University of Birmingham) presented a scoping review that is in progress. The rationale was:

- To have a clear understanding of what specific settings and populations the existing high quality research covers regarding inappropriate prescribing.
- To identify where there are gaps in the evidence, for example: interventions/tools aimed at certain populations; interventions for use in different settings; research from different perspectives (staff, patients or carers).

Early findings of the scoping review indicate:

- inconclusive evidence that the interventions have an effect on the length of hospital admission, mortality or re-admissions
- some evidence suggests that different interventions can reduce inappropriate prescribing
- only one review reported a slower decline in health related quality of life
- more high quality studies need to be done and new technologies need to be evaluated.

8. Meeting the medicines optimisation challenges of patients: dysphagia and aphasia

Medicines and the dysphagia pathway

Nina Barnett outlined why her team developed an improved understanding of how to talk about, administer and manage medicines along two care pathways.

Patients with dysphagia are unable to take some oral formulations of medication, and more errors have been identified in patients with dysphagia than in patients without. There are common complications of other conditions occurring in patients suffering stroke, dementia and chronic obstructive pulmonary disease. Patients with swallowing difficulties typically need liquid medicines and there are different stages, or consistencies of fluids that can be chosen, and medicines administration modified to optimise patients' experience of taking medicines.

In order to improve the service, staff undertook a defined learning journey to better understand the needs of patients with dysphagia. A flow-chart of managing medicines in patients with

dysphagia was developed and successfully utilised. Resources are available to share: https://www.sps.nhs.uk/articles/supporting-patients-with-swallowing-difficulties-medicines-and-dysphagia/ .

Helping people with communication difficulties after stroke to understand warfarin therapy

Patients with aphasia have usually had a stroke, brain tumour, traumatic head injury or hypoxic brain injury. When assessing which anti-coagulant might be most appropriate, advantages and disadvantages must be considered alongside a risk assessment. Pharmacists and doctors do not necessarily have guidance on how best to care for aphasia patients. NPSA guidance 2006 stressed the importance that patients put on doctors finding enough time to talk to and explain risks and counsel them prior to starting anticoagulation treatment. However, mainstream Yellow Book/written guidance is not appropriate for aphasia patients since the content is too dense and word-heavy. Nina's team held a learning event with pharmacists and speech and language therapists, which concluded that patients with aphasia require short messages, clear sentences, easy words, a good layout, diagrams, pictures and an appropriate font. Transformed written/pictorial guidance has been created around warfarin, the need for regular blood tests (the INR test), and food and alcohol considerations. Resources are available to share: https://www.sps.nhs.uk/articles/warfarin-consultation-for-patients-with-aphasia/ .

9. Conclusion

We hope that these conference proceedings will 'whet your appetite' and that you will explore more though the presentations on the NIHR CLAHRC NWL website (see link in the introduction to these proceedings), and the references below. The learning event was both inspiring and encouraging as we explored together each other's successes and challenges. We encourage others to get together in learning event settings and to publish their learning for the benefit of all stakeholders who are concerned with patients and getting the most out of their medicines.

Declaration of interests

The authors have nothing to disclose.

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