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Application of process mapping to understand integration of high risk medicine care bundles within community pharmacy practice

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ABSTRACT

Objective: The Scottish Patient Safety Programme – Pharmacy in Primary Care collaborative is a quality improvement initiative adopting the Institute of Healthcare Improvement Breakthrough Series collaborative approach. The programme developed and piloted High Risk Medicine (HRM) Care Bundles (CB), focused on warfarin and non-steroidal anti-inflammatories (NSAIDs), within 27 community pharmacies over 4 NHS Regions. Each CB involves clinical assessment and patient education, although the CB content varies between regions. To support national implementation, this study aims to understand how the pilot pharmacies integrated the HRM CBs into routine practice to inform the development of a generic HRM CB process map.

Methods: Regional process maps were developed in 4 pharmacies through simulation of the CB process, staff interviews and documentation of resources. Commonalities were collated to develop a process map for each HRM, which were used to explore variation at a national event. A single, generic process map was developed which underwent validation by case study testing.

Results: The findings allowed development of a generic process map applicable to warfarin and NSAID CB implementation. Five steps were identified as required for successful CB delivery: patient identification; clinical assessment; pharmacy CB prompt; CB delivery; and documentation. The generic HRM CB process map encompasses the staff and patients' journey and the CB's integration into routine community pharmacy practice. Pharmacist involvement was required only for clinical assessment, indicating suitability for whole-team involvement.

Conclusions: Understanding CB integration into routine practice has positive implications for successful implementation. The generic process map can be used to develop targeted resources, and/or be disseminated to facilitate CB delivery and foster whole team involvement. Similar methods could be utilised within other settings, to allow those developing novel services to distil the key processes and consider their integration within routine workflows to effect maximal, efficient implementation and benefit to patient care.

1. Introduction

Studies within the United Kingdom (UK) show 6.5% of hospital admissions are attributed to adverse effects of High Risk Medicines (HRM) - including Warfarin and Non-steroidal anti-inflammatory drugs (NSAIDs).¹ This figure is not dissimilar to international prospective studies and similar causative medicines have been identified as high risk.^{2,3} The pharmacist's potential contribution to patient safety within

primary care has been highlighted,⁴ and internationally community pharmacists' roles are expanding to be increasingly integrated within primary care.^{5–7}

Within the UK, this transition has resulted in the introduction of new services including community pharmacy minor ailment schemes, with positive feedback from pharmacists and patients.^{8–10} The drive for community pharmacy to provide enhanced patient safety services aligns with the Scottish Government's vision and action plan,

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Prescription for Excellence.⁶ Within Scotland, a national patient safety programme has since launched within community pharmacy in 2014, called The Scottish Patient Safety Programme - Pharmacy in Primary Care (SPSP-PPC) collaborative.¹¹

The SPSP-PPC collaborative is a multi-site quality improvement initiative adopting the Institute of Healthcare Improvement Breakthrough Series collaborative approach - a structured learning model consisting of Learning Sessions to share progress and discuss practice changes and Action Periods where those changes are tested in the health care setting.¹² Participating pharmacy teams were trained in the Model for Improvement which was the guiding quality improvement framework operationalized at pharmacy site level through the application of 'Plan-Do-Study-Act' (PDSA) cycles, as a means to facilitate rapid testing of small-scale changes.¹³

The programme aims to improve patient safety by implementing safety interventions using a team-based approach. An ambition of the programme is to make community pharmacy processes safer while strengthening their contribution within primary care. A core component was to reduce the risk associated with the HRMs Warfarin and NSAIDs through the development of Care Bundles (CBs), defined as a "structured way of improving the processes of care and patient outcomes: a small, straightforward set of evidence-based practices".¹⁴ Box 1 provides an overview of the programme structure and the HRM CBs developed.

An anticipated challenge to the adoption of new services within pharmacy practice is the potential variation of processes, as it is well established that integration within existing workflow can influence successful implementation of health service innovations.¹⁶⁻¹⁸ Variation in pharmacy practice has been identified within other health services,¹⁹⁻²¹ although to our knowledge there has been no research into the extent of process variation within the Scottish community pharmacy setting. Consequently, an understanding of this variation may support national implementation of the HRM CB by allowing consideration of how this novel service could successfully integrate into

routine pharmacy practice.

This study aims to understand how the pilot pharmacies integrated the novel HRM CBs into routine practice in order to inform the development of a generic process map that could be used to facilitate national implementation.

2. Methods

A qualitative case-study method was employed.²² Process mapping was applied throughout the study. This involves exploration of the tasks occurring within a process, with the findings used to develop sequential flow charts of the actions and decisions performed, with arrows depicting the sequence of activities.²³ Due to the complexity of the programme design - with a focus on 2 different HRMs and 4 different care bundles operationalized in different regions - a four-phased approach was used. An overview of the methods is shown in Fig. 1.

2.1. Phase 1: development of regional process maps

Pharmacies were selected for case study on-site evaluations based on March 2015 activity data reporting on number of patients delivered the CB, CB compliance and reliability. The top 3 performing pharmacies within each NHS Region were identified, and final selection agreed in discussion with the Regional Leads taking account of feasibility of on-site visits. One pharmacy from each participating NHS Region was chosen and contacted to arrange suitable dates.

During June and July 2015 case studies were conducted. Data were collected in 3 ways: (1) observation of a simulation of the CB process with pharmacy staff, (2) documentation of resources used and (3) staff interviews. Demographic details of participants collected included gender, job role and duration worked in community pharmacy.

The simulation exercise involved pharmacy staff providing a "talk and walkthrough" of the CB process as it would normally be delivered to a patient.²⁴ This allowed for resources used within the pharmacy

Box 1

Overview of the Programme Structure and the High Risk Medicine Care Bundles

Programme Structure and Leadership:

- Four NHS Regions were recruited, involving 27 pharmacy sites in total
 - Region 1 (n = 5) ◦ Region 2 (n = 7)
 - Region 3 (n = 5) ◦ Region 4 (n = 10)
- National Leads (n = 2), Regional Leads (n = 8), Programme Officers, Data Analysts, Improvement Advisors and the Evaluation Team comprise the SPSP-PPC Steering Group.

Programme Support:

- Two National Learning Events (NLE) and 2 Local Learning Events (LLE) were attended by teams from each pharmacy site, typically comprising a pharmacist and a member of support staff (the "Away Team"). Concepts of patient safety, safety culture and Quality Improvement methods were taught and the HRM CBs introduced.
- Regional Leads provided local support, and pharmacy resources developed included an SPSP Launch Folder and the SPSP-PPC Knowledge Network website.¹⁵

HRM CBs:

- Region-specific CBs comprising of 4-6 questions relating to a measure of care were developed by the Regional Leads and pharmacy Away Teams using driver diagrams.
- The NSAID CB measures focused on concordance, assessment of side effects, gastro-protection and co-prescribing of other high-risk medications.
- The Warfarin CB measures focused on patients' knowledge of interactions and side effects, and patients' use of the warfarin record book and alert card.
- Pharmacy staff compliance with CB measures were documented on run charts, to allow visual representation of pharmacy sites' improvement and the impact of PDSA cycles.

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