



# Scottish Patient Safety Programme – Pharmacy in Primary Care Collaborative Final Evaluation Report

November 2016



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## ABBREVIATIONS

<b>BTS</b>	Breakthrough Series
<b>CB</b>	Care Bundle
<b>CE</b>	Celebratory Event
<b>CP</b>	Community Pharmacy
<b>DP</b>	Dispensing Practice
<b>eIDL</b>	Electronic Immediate Discharge Letter
<b>GPs</b>	General Practitioners
<b>HIS</b>	Healthcare Improvement Scotland
<b>HRM</b>	High Risk Medicines
<b>IDL</b>	Immediate Discharge Letter
<b>IHI</b>	Institute of Healthcare Improvement
<b>LLE</b>	Local Learning Event
<b>MI</b>	Model for Improvement
<b>MPT</b>	Multi-professional team
<b>NGT</b>	Nominal Group Technique
<b>NHS GG&amp;C</b>	NHS Greater Glasgow & Clyde
<b>NLE</b>	National Learning Event
<b>NSAIDs</b>	Non-steroidal anti-inflammatory drugs
<b>OAT</b>	Oral anti-coagulant therapy
<b>OTC</b>	Over-the-counter
<b>PC</b>	Primary care
<b>PDSA</b>	Plan-Do-Study-Act
<b>QA1 – QA5b</b>	Questionnaire 1-5b
<b>QI</b>	Quality Improvement
<b>QIC</b>	Quality Improvement Collaborative
<b>Rx</b>	Prescription
<b>SBAR</b>	Situation-Background-Assessment-Recommendation
<b>SIPBS</b>	Strathclyde Institute of Pharmacy & Biomedical Science
<b>SPSP</b>	Scottish Patient Safety Programme
<b>SPSP-PPC</b>	Scottish Patient Safety Programme-Pharmacy Primary Care
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America

## GLOSSARY OF TERMS

<b>GP10</b>	A prescription.
<b>Away Team</b>	The Pharmacist/manager and member of support staff from sites participating in the SPSP-PPC collaborative.
<b>Home Team</b>	Other staff working in the sites participating in the SPSP-PPC collaborative.
<b>Dosette Box</b>	Provided by Community Pharmacy/Dispensing practices, these are boxes with small compartments that show clearly which pills need to be taken at what time of day.
<b>Triple Whammy</b>	Combinations of diuretics, nonsteroidal anti-inflammatory drugs (NSAIDs), ACE inhibitors (ACEI) and/or angiotensin receptor antagonists (ARA) that may impair renal function.

## INTRODUCTION

### The Scottish Patient Safety Programme-Pharmacy in Primary Care (SPSP-PPC) Collaborative

#### *i. Background to the SPSP*

The Scottish Patient Safety Programme (SPSP) is a national quality improvement initiative which launched in 2008. NHS Scotland collaborated with the Institute of Healthcare Improvement (IHI) on the programme, and the theoretical basis of the implementation process was depicted by Paul Carlile and Clay Christensen, who developed a driver diagram with actionable guidance on how to meet the overarching aim to “Improve Safety of Healthcare Services in Scotland” (1). Within the acute sector a number of successes were achieved: a 7% reduction in hospital standardised mortality rates, a 70% reduction in Clostridium Difficile infection since 2007 and an avoidance of 125000 “bed days” in two years for those over 65 years old (2).

As an output of the NHS Quality Strategy 2010 (3), the SPSP migrated into primary care, and the programme is now led by NHS Healthcare Improvement Scotland (HIS). Following a two year pilot phase within General Practices (GP practices), national rollout aimed for 95% of primary care teams to participate in [1] achieving reliability on the safe prescribing and monitoring of Warfarin, Methotrexate and Azathioprine, [2] developing reliable care systems for medication reconciliation and [3] developing the safety culture of general practices. This was facilitated by contractual changes to the 2013/2014 Quality Outcomes Framework, which continued into subsequent contracts (4). The SPSP in GP practices has been described as a “significant success” by achieving focused, co-ordinated action on safety concerns (5). Tools developed were effective in identifying previously undetected patient safety incidents, and positive outcomes were observed with improvements of patients Warfarin INR control (6, 7).

#### *ii. Introduction to the SPSP-PPC*

As outlined in Prescription for Excellence, the SPSP programme extended into the community pharmacy setting as the SPSP-Pharmacy in Primary Care (SPSP-PPC) collaborative in 2014 (8). This is also in alignment with the NHS Quality Strategy 2010, as there is a strong emphasis on a “whole system” approach (3). Internationally, community pharmacists’ roles are expanding to be increasingly integrated within primary care (9-11). Within the United Kingdom (UK), this transition has already resulted in the introduction of services such as community pharmacy minor ailment schemes, with positive pharmacists and patient views (12-14).

#### *iii. Aim of the SPSP-PPC*

The overarching aim of the SPSP-PPC is to “improve patient safety by strengthening the contribution of community pharmacy and improving communications within the primary care team”. The SPSP-PPC seeks to achieve this through the formation of a collaborative and use of established improvement tools and approaches focused on three areas of interest: High Risk Medicines, Safety Culture and Medicines Reconciliation.

#### *iv. Programme Overview*



The programme is led by two National Leads. Four NHS Health Boards became involved following a competitive application process. These were:

- NHS Greater Glasgow and Clyde (NHS GG&C)
- NHS Highland
- Health Board
- NHS Grampian

For each NHS Board, two Health Board Leads were recruited - a Clinical Lead and a Board Facilitator. Also via a competitive process, twenty-seven community pharmacy sites were selected to participate (NHS GG&C n=10, NHS Highland, n=5, NHS Grampian n=5, NHS Fife n=7), and two dispensing practices (Highland n=2). See Figure 1 below for brief demographic details.

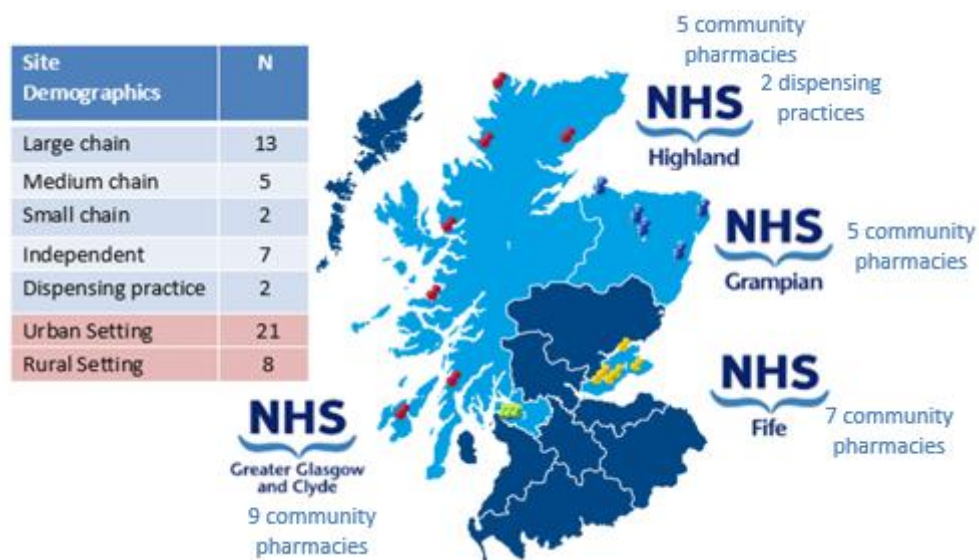


Figure 1: SPSP-PPC study sites with demographics

*NB The image shows 9 community pharmacies in Greater Glasgow and Clyde as one pharmacy withdrew participation midway through the pilot*

The Health Board Leads provided local support to the community pharmacies and dispensing practices, and supportive site resources included an SPSP Launch Folder and access to the SPSP-PPC Knowledge Network website (15).

A Steering Group was set up and met approximately every two months to share information on the progress in the four Health Boards. In addition to the National and Local Health Board Leads, the Steering Group comprised of representatives from the SPSP-PPC Evaluation Team (from the University of Strathclyde and NHS Education for Scotland), Patient Representative, Project Officers, Data and Measurement Advisors and NHS Senior Management.

v. *SPSP-PPC Change Packages*

### High Risk Medicines Care Bundles:

Within the UK, studies 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) (16). Resultantly, the SPSP-PPC collaborative developed and implemented High Risk Medicine Care Bundles for patients on Warfarin and NSAIDs. A Care Bundle can be defined as a set of structured interventions that improve patient outcomes and health services process (17). Within the sites, the Care Bundles focus on clinical assessment and patient education – involving identification of patients on these high risk medicines, clinical assessment and asking of series of question to ensure patient understanding. Two of the participating health boards chose to focus on Warfarin (NHS Grampian and NHS Fife), and two on NSAIDs (NHS GG&C and NHS Highland). Across the four Health Boards, different Care Bundles were developed each with different aims (aims in Figure 2).

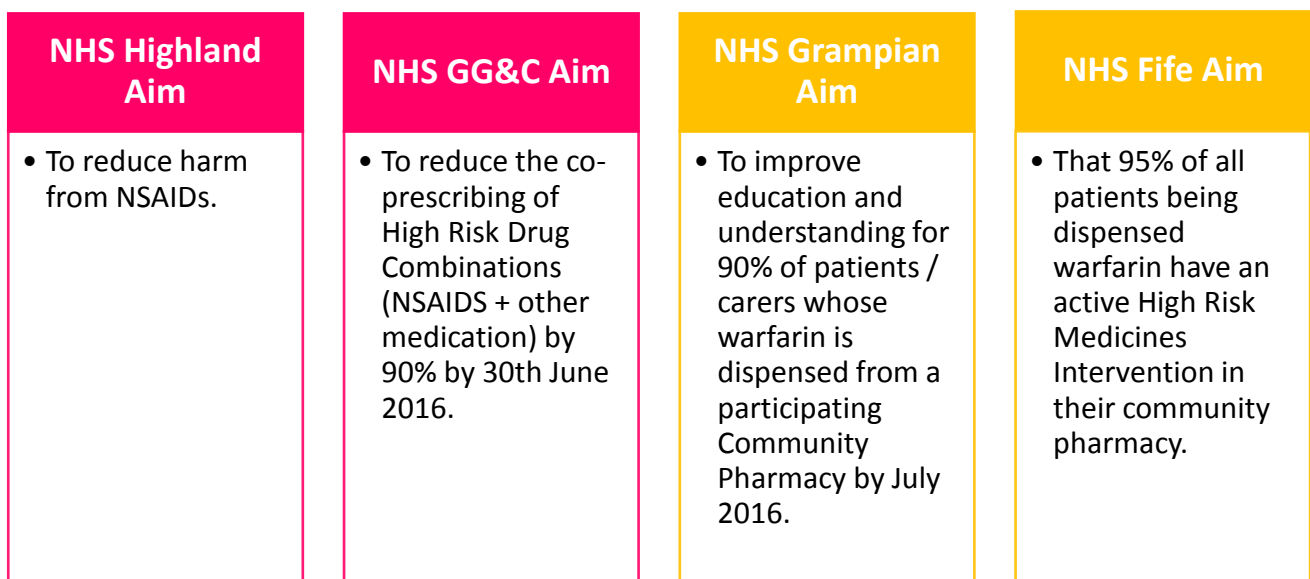


Figure 2: Health Board High Risk Medicines Care Bundle Aims

Figure 3 presents the Care Bundles questions, and the guidance and rationale for each can be found in Appendix 1.

<p><b>NHS Highland NSAID Care Bundle</b></p>	<ul style="list-style-type: none"> <li>• Has the patient been informed to take it with or after food?</li> <li>• Has the patient been informed to report any GI side effects to their pharmacist or GP?</li> <li>• Is the patient aware of the Medicine Sick Day Rules?</li> <li>• Is the patient in a high risk group requiring gastroprotection? If yes, has gastroprotection been prescribed?</li> <li>• Is the patient prescribed the triple whammy combination? If yes, has the triple whammy combination been highlighted to the prescriber?</li> </ul>
<p><b>NHS GG&amp;C NSAID Care Bundle</b></p>	<ul style="list-style-type: none"> <li>• Have you checked that the patient is concordant with taking their NSAID?</li> <li>• Have you checked if the patient is experiencing adverse drug reactions or side effects?</li> <li>• Has gastroprotection been prescribed for high risk patients?</li> <li>• For patients identified as taking other high risk drugs, has this risk been highlighted to the prescriber?</li> <li>• If the prescriber was contacted, was the resulting review communicated back to the pharmacy?</li> <li>• Has this change been discussed by the pharmacist with the patient/carer?</li> </ul>
<p><b>NHS Fife Warfarin Care Bundle</b></p>	<ul style="list-style-type: none"> <li>• Does the patient have an up to date Oral Anti-Coagulant Therapy (OAT) record book (indication, duration of treatment and therapeutic range)?</li> <li>• Does the patient carry an up to date alert card (indication, duration of treatment and target range)?</li> <li>• Does the patient know what to do if they have missed a dose of warfarin?</li> <li>• Is the patient aware that they should inform the team responsible for their warfarin care of any significant changes that may affect their warfarin? E.g. Newly prescribed medicines, certain OTC medicines and changes to food/alcohol.</li> <li>• Is the patient aware of what to do if they are suffering from signs and symptoms of over/under-coagulation?</li> <li>• Is the patient aware that they should have an INR test 3 days after starting a course of antibiotics?</li> </ul>
<p><b>NHS Grampian Warfarin Care Bundle</b></p>	<ul style="list-style-type: none"> <li>• Is the yellow OAT record booklet up to date / current including completed information (indication, duration of treatment and therapeutic range)?</li> <li>• Is the OAT alert card up to date / current including completed information (indication, duration of treatment and target range)?</li> <li>• Is the patient / carer aware that the Yellow OAT record booklet is taken to EVERY healthcare intervention?</li> <li>• Is the patient / carer aware that they should carry the Alert Card at all times?</li> </ul>

Figure 3: Health Board High Risk Medicines Care Bundle Questions

*Community Pharmacy Safety Climate Survey (SafeQuest-CP):*

Within the UK, findings have suggested community pharmacy staff perceive a blame culture when reporting incidents (18). The safety culture of an organisation is the product of “*individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety programmes*” (19). To measure the underlying safety climate within community pharmacy and raise awareness of the importance of a positive safety culture, a psychometrically validated questionnaire was developed to measure safety climate perceptions in community pharmacy (20). This was called SafeQuest-CP, and includes 5 domains (Figure 4):

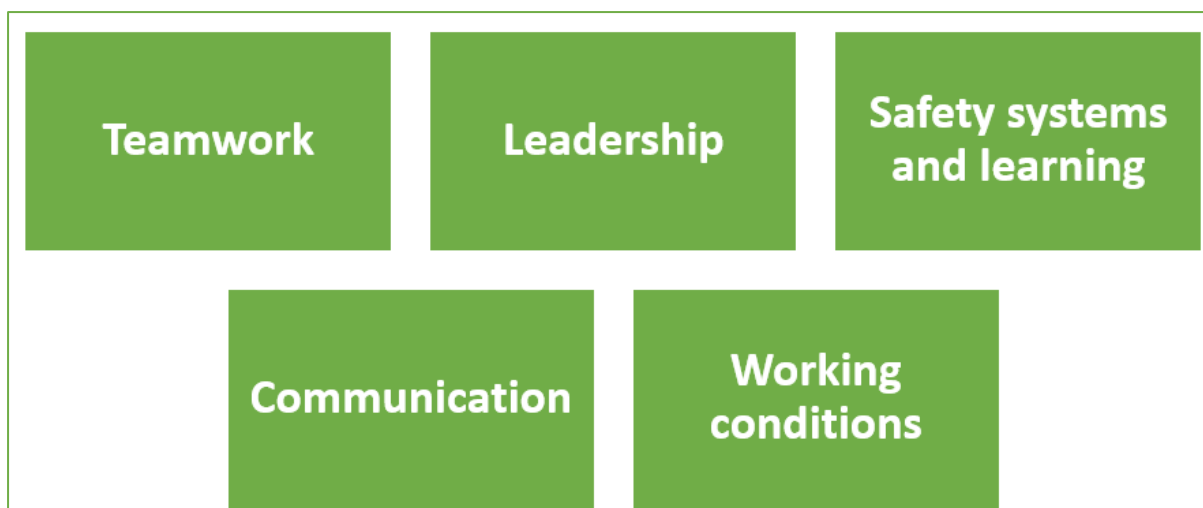


Figure 4: Domains of SafeQuest-CP Questionnaire

The SPSP-PPC pharmacies piloted the use of this questionnaire in routine practice, which involved annual participation in the SafeQuest-CP questionnaire online, followed by an in-house reflective meeting to discuss the results, which are benchmarked against the SPSP-PPC sites generated average. Appendix 2 details the questionnaire items for SafeQuest-CP. SafeQuest-CP is now accessible online (21).

*Medicines Reconciliation Care Bundle:*

Medicine reconciliation errors during the transition of care has previously been highlighted. One report by the Royal Pharmaceutical Society of Great Britain in 2009 revealed that between 46-60% of patients had discrepancies in their discharge medication (22). The Medicines Reconciliation Care Bundle (Figure 5) aims to ensure that patients discharged from hospital with a change in medication have their medicines accurately reconciled by their community pharmacy. The Health Board Leads collaborated to develop a single care bundle for testing across the four Health Boards. Participation in the care bundle involves Immediate Discharge Letters (IDLs) being sent to the community pharmacy, and following collaboration with GP practices, the staff then reconciles the patients' medication with the patient, ensuring they have adequate understanding of any changes made. Appendix 3 details of the Medicine Reconciliation Care Bundle.

<b>Medicines Reconciliation Care Bundle</b>	<ul style="list-style-type: none"> <li>Is there a record that the GP10 prescription has been reconciled with a minimum of two sources?</li> <li>Have identified differences been discussed with the prescriber?</li> <li>Have the changes been explained to the patient/carer?</li> <li>Has the patient/carer been counselled on their medicines?</li> </ul>
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Figure 5: Medicines Reconciliation Care Bundle Questions

**Overview of the Collaborative Approach**

Building on the earlier SPSP experience the SPSP-PPC collaborative involved the use of Quality Improvement (QI) methodology and the Breakthrough Series Collaborative Model. At Project Steering

Group level, driver diagrams, care bundles and run charts were utilised. At the sharp end, site staff were trained to use Quality Improvement tools, such as the 'Plan-Do-Study-Act' (PDSA) cycles, to implement the programme to adapt it to their local context. Additionally, collaborative learning and development was encouraged at various Local and National Learning Events.

Collaborative models bring individuals together in a structured way to focus on the quality of aspects within an area of the health service, and are being increasingly used in both the UK and the United States of America (USA) (23). Typically, they encourage people to share experiences and involve learning about improvement methods, best practice and change ideas (23).

The Breakthrough Series (BTS) Collaborative Model is one example of a collaborative model, which was initially developed in the early 90s by the IHI and has been refined following its application in various contexts, including within UK primary care settings (24). It offers a model for structured learning sessions, allowing for collaborative learning, broken up by actions periods where changes are tested in practice. A systematic review in 2008 analysed the outcomes of 12 controlled design studies to measure the effects of the collaborative method (25). The BTS Collaborative model was used in seven of these, and despite limited evidence it was concluded that there was moderate positive outcomes. This collaborative model was utilised for the SPSP-PPC, as depicted below in Figure 6.

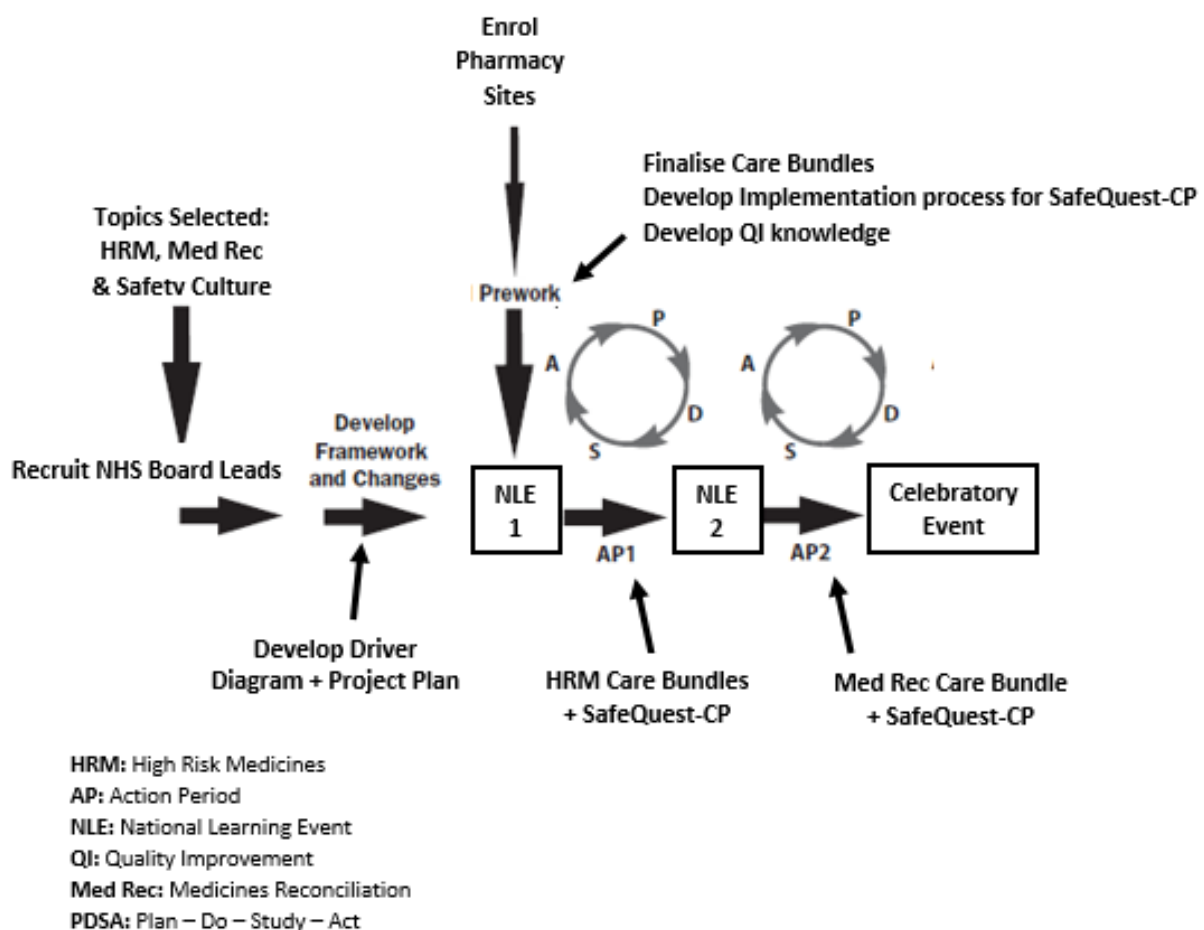


Figure 6: The SPSP-PPC Breakthrough Series Collaborative Model

Three National Learning Events (NLE) and two Local Learning Events (LLE) were attended by site "Away Teams". The "Away Team" comprised of two representatives from each site, mainly the manager and

a member of support staff. Following attendance at these events, the “Away Team” members were encouraged to share the learning with their colleagues back in their sites and at the LLE. For the purpose of the evaluation the site staff were termed “Home Teams”. Further detail of the NLE and LLE is provided in the methods section.

### The SPSP-PPC Evaluation Team

The SPSP-PPC Evaluation Team comprised of members drawn from NHS Education for Scotland and the Strathclyde Institute of Pharmacy and Biomedical Sciences (SIPBS):

*Professor Marion Bennie, Professor of Pharmacy Practice, University of Strathclyde*

*Dr Rosemary Newham, Research Fellow, University of Strathclyde*

*Mrs Emma Dunlop Corcoran, Research Assistant, University of Strathclyde*

*Prof Anne Watson, Postgraduate Pharmacy Dean, NHS Education for Scotland*

*Dr Paul Bowie, Programme Director for Safety & Improvement, Associate Advisor, NHS Education for Scotland*

*Ms Natalie McFadyen Weir, PhD candidate, University of Strathclyde*

The team was supported by an Evaluation Steering Group which met approximately 4-6 monthly. This group comprised the aforementioned individuals and also representatives for NHS Healthcare Improvement Scotland (HIS):

*Dr Neil Houston, National Clinical Lead Patient Safety in Primary Care, NHS Health Improvement Scotland (HIS)*

*Ms Jill Gillies, Improvement Advisor, NHS HIS*

*Ms Andrea Smith, National Clinical Lead SPSP-PPC, NHS HIS*

*Ms Wendy Forbes, Project Officer, NHS HIS (Administrative Support)*

#### i. Scope of Evaluation

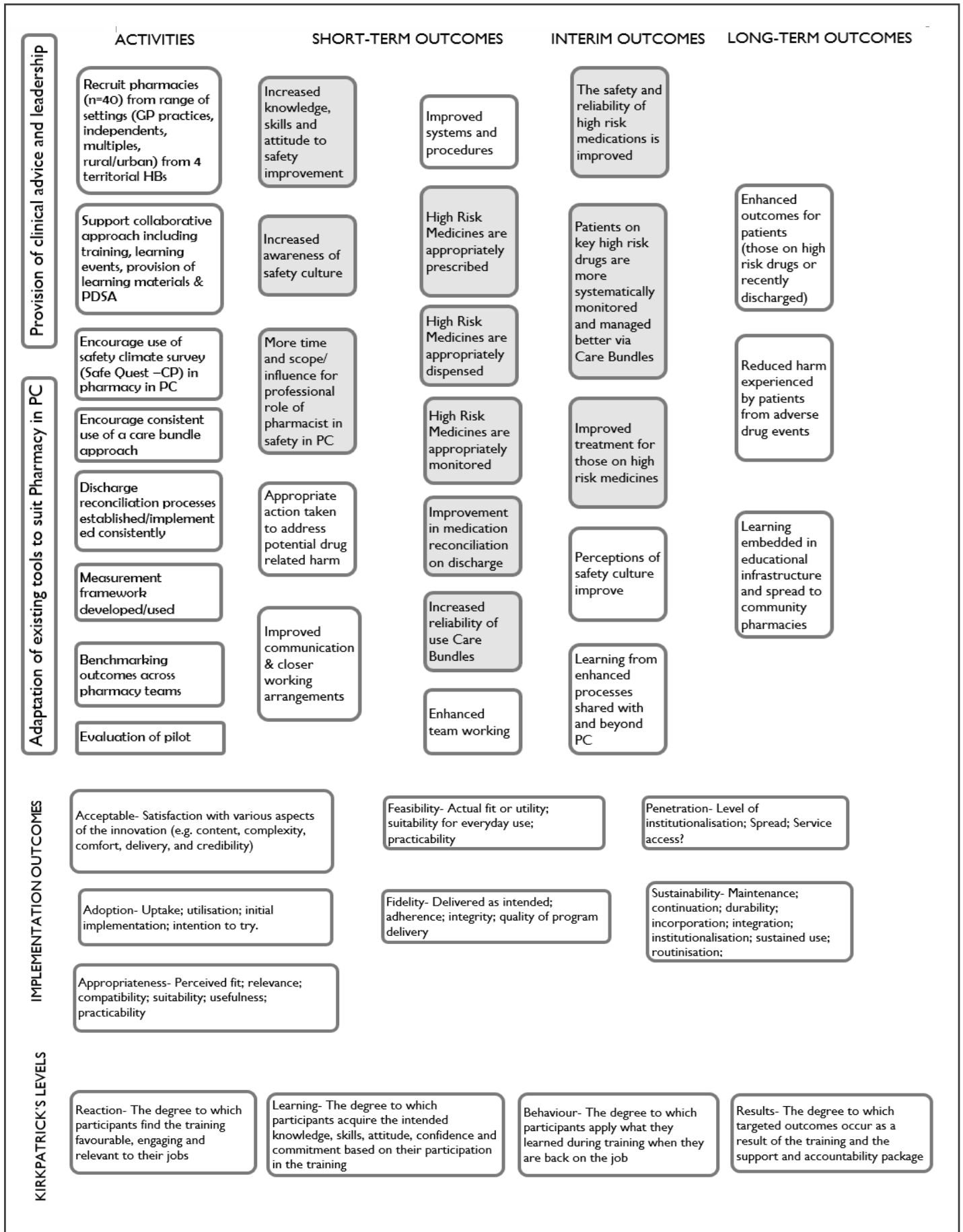
The SPSP-PPC collaborative theory is presented in Figure 7 as a Logic Model. The logic model highlights the potential to link selected intervention activities and their anticipated outcomes. The theory driven perspective is based upon the assumption that the long-term outcomes will only be achieved if the short and interim outcomes (within the logic model) are delivered as anticipated. This fact, the timeframe of the study and the funding made available for the evaluation has resulted in this evaluation focusing on short-term and interim outcomes and the alignment of these to the activities delivered. Consequently, the overall aim of the evaluation is to ascertain if medication care process reliability and patient safety knowledge, skills, attitudes and behaviours can be improved by:

- Using an Improvement Collaborative Programme, including the Model for Improvement (MI)/PDSA cycles, to drive improvements in communication and closer working relationships between pharmacy teams and GP practices.
- Using a care bundle approach to enhance the appropriate prescribing, dispensing and monitoring of high risk medications

- Improving the reconciliation of high risk medications when a patient is discharged from hospital
- Encouraging the use of the SafeQuest-CP questionnaires in pharmacy in primary care teams so increasing the awareness of, and learning focus on, the organisational and professional factors contributing to a strong 'safety culture'
- Building relevant topic expertise in a range of settings and stakeholder groups (e.g. primary care (PC) pharmacy leaders, academics, educators and improvement advisers in territorial and special health boards).

The evaluation has been designed to explore both: the delivery of the collaborative approach in support of the change packages (and factors which went well and not so well); and how the pharmacy/dispensing practice sites are utilising the change packages. Within this context the Evaluation Team pose four evaluation questions:

- (1) To what extent was the overall programme a success? What were the barriers/successes to engagement at community pharmacy/dispensing practice and NHS Board level?
- (2) How did the intervention programmes improve the practice of high risk medicines (HRM) handling?
- (3) How did the intervention programme improve the process of Medicines Reconciliation – specifically changes in communication between multi-professional team (MPT)?
- (4) How did the intervention programme improve awareness and perception of safety climate? Did this change communication between MPT?





## ii. Ethics

Ethical approval was not deemed necessary because: the project was considered as a service development; patients were not involved in data collection or the wider study; and participant recruitment was invitational and any data would be irreversibly anonymised to protect identities. Participants gave their written and verbal consent to take part in any research activities through the completion of questionnaires and/or consent forms or recorded verbal confirmation of consent, and could not be identified by direct quotation used. Furthermore, the University of Strathclyde's Code of Practice on Investigations Involving Human Beings does not apply to work that is part of routine practices in professional contexts, a service evaluation or an audit of an existing service. Consequently, University of Strathclyde ethical approval was not required for this piece of work. All participants received a full explanation of any research activities and assurances about confidentiality and anonymity were given

## Theoretical Frameworks

The analysis has been guided by two theory driven analytical frameworks: firstly, a learning evaluation theory (the Kirkpatrick Model) to investigate the process and impact of education and training delivered through the collaborative; secondly, Implementation Science Theory (Proctor et al's Taxonomy of Outcomes and Schouten et al's and Ducker et al's Quality Improvement Collaborative Success Factors) to examine how the program had been implemented and gain understanding of the factors which may affect the implementation process on moving to rollout across NHS Scotland.

### i. Learning Evaluation Theory

The reason for evaluating any learning or training programme is often cited as establishing the effectiveness of the intervention (26). There are a vast array of learning evaluation models available through which to evaluate training/learning interventions, many of which enable multi-level analysis applied at a range of organisational scales. As the SPSP-PPC collaborative was multi-dimensional, it was important to choose a model which would assist the assessment of QI methodology learning in a way that provided measurement of real-world observable changes in staff working practices, aligned to patient safety; the Kirkpatrick Model was selected for this study.

The Kirkpatrick Model was first published in 1959 by Dr Don Kirkpatrick as a framework for evaluating the effectiveness of training intervention (27, 28). This theoretical model was devised into an applicable Business Model and Consultancy Service in 2008, and was again remodelled in 2010 (29). The model spans time before, during and after training in order to provide a comprehensive view of training impact.

The Kirkpatrick model stipulates a number of founding principles important to its application which were considered to have been met in the context of the SPSP-PPC collaborative: firstly, **successful training begins where it ends**, that is, training designers must consider the desired measurable outcomes or results before designing a training intervention to influence those results – the pre-specified SPSP change packages; secondly, **an appropriate needs assessment is required when designing, delivering and evaluating a training** - the program was shaped by a pre-existing and pre-

measured need to improve patient safety; thirdly, **successful business partnership** – a shared vision and co-creation of change packages to improve patient safety across the collaborative was established; fourthly, **“learning professionals” in any given training environment must also invest themselves at the first three stages of the model** – the Away Teams receiving the training had responsibilities for dissemination and application within the practice sites; fifthly, the Kirkpatrick model proposes to **provide a reliable chain of evidence** which will illustrate the true value and impact of a training intervention, if the model attributes are incorporated and considered at the time of training delivery and evaluation design – model incorporated into the SPSP-PPC program design and evaluation process.

The model also provides suggestions as to how best to evaluate each level (Figure 8), in order to gain accurate and reliable measures of success and these have been incorporated into the SPSP-PPC evaluation plan.

LEVEL	EVALUATION DESCRIPTION	EXAMPLES OF TOOLS
<b>Level 1: Reaction</b>	The degree to which participants find the training favourable, engaging and relevant to their jobs	Feedback forms.  Verbal reaction, post-training surveys or questionnaires.
<b>Level 2: Learning</b>	The degree to which participants acquire the intended knowledge, skills, attitude, confidence and commitment based on their participation in the training	Assessments or tests before and after the training.  Interview or observation
<b>Level 3: Behaviour</b>	The degree to which participants apply what they learned during training when they are back on the job	Observation and interview over time
<b>Level 4: Results</b>	The degree to which targeted outcomes occur as a result of the training and the support and accountability package	Measures are already in place via normal management systems and reporting

Figure 8: Suggested Evaluation Tools For Each Level of the Kirkpatrick Model

i. Implementation Science Theory

Implementation Science can be defined as the “study of theories, process, models and methods of implementing evidence-based practice” (30). Its application throughout the evaluation of the SPSP-PPC was crucial to offer theoretical underpinning to the programme design and inform the next phases of implementation. The theoretical basis of implementation science is operationalized through frameworks or theories which can guide or offer understanding to various aspects of implementation (31).

Nilsen identified that Implementation frameworks can have one of three aims (31). Figure 9 outlines the three framework types, and the specific framework selected for application to the SPSP-PPC evaluation. As many Implementation Frameworks focus only on a single aspect applicable to implementation, using multiple to guide an implementation process and evaluation can have merit (32, 33).

Different aims of Implementation Frameworks	Implementation Framework or Theory applied to the SPSP-PPC Evaluation
Those which offer guidance on implementation evaluation	Proctor et al's Taxonomy of Outcomes (34).
Those offering understanding or explanation on the factors which can affect the implementation process	Schouten et al's and Ducker et al's success factors within Quality Improvement Collaborative (35, 36).
Those which describe or offer guidance on the implementation process	The Institute of Healthcare Improvements (IHI) framework 'Going to Full Scale' (37).

Figure 9: Implementation Frameworks Applied Within the SPSP-PPC Evaluation

NB. Definitions adapted by Nilsen.

#### Proctor et al's Taxonomy of Outcomes

Procter and colleagues describe three facets of outcome: implementation outcome, service outcome and clinical outcome, depicted in Figure 10. The merit of looking at each allows for an understanding of not just the benefits of the SPSP-PPC elements (service and patient outcome), but also the pragmatism surrounding implementation (implementation outcome) (38, 39). It is theorised that implementation outcomes, such as feasibility, will impact on service and patient outcomes.

Implementation Outcomes	Service Outcomes	Client Outcomes
Acceptability	Efficiency	Satisfaction
Adoption	Safety	Function
Appropriateness	Effectiveness	Symptomology
Cost	Equity	
Feasibility	Patient-Centeredness	
Fidelity	Timeliness	
Penetration		
Sustainability		

Figure 10: Proctor et al's Taxonomy of Outcomes

For the purpose of this study the Evaluation Team have used the Implementation outcome domains (definitions outlined in Figure 11 (34)) as the main framework to analyse the early deployment of the SPSP-PPC change packages. These can be used to "model implementation success", and allow further implementation efforts to be designed to facilitate different aspects – for example improving the healthcare professionals' acceptance using an appropriate communication strategy. The evaluation results also present some early findings of service/client outcomes, where appropriate. Many of Proctor et al's taxonomy constructs are heavily influenced by Everett Rogers 'Diffusion of Innovation' (40).

The definitions of the Implementation outcomes can be found in Figure 11 (34):

FACTOR	DEFINITION
<b>Acceptability</b>	The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory.
<b>Adoption</b>	The intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as “uptake.”
<b>Appropriateness</b>	The perceived fit, relevance, or compatibility of the innovation or evidence based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem.
<b>Feasibility</b>	The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting.
<b>Fidelity</b>	The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers.
<b>Cost</b>	The cost impact of an implementation effort.
<b>Penetration</b>	The integration of a practice within a service setting and its subsystems.
<b>Sustainability</b>	The extent to which a newly implemented treatment is maintained or institutionalized within a service setting’s ongoing, stable operations.

Figure 11: Definitions of Proctor et al's Implementation Outcomes

### Shouten and Duckers Quality Improvement Collaborative Success Factors

Work by both Schouten et al and Duckers et al has focused on the development of psychometrically validated instruments to measure Quality Improvement Collaborative (QIC) Success Factors (35, 36). Both instruments focus on crucial elements to success within QICs, with overlapping constructs. For the purpose of this study the Evaluation Team conducted a content analysis to develop a single questionnaire contextualised to the SPSP-PPC setting (see Methods for detail) which focused on the following determinants of collaborative success: Expert Leads Support, Teamwork, Collaborative Process and Organisation Support.

## METHODOLOGY

The SPSP-PPC collaborative activities have been delivered over a two year time period commencing in November 2014 with a national event and completing in October 2016 with a celebratory event. During this timeframe the Evaluation Team have worked closely with the programme participants to gather evidence to describe and understand how the collaborative has been working, the successes and challenges with implementing the three change packages and identifying any early quantifiable outcomes and impact of the program on patient care.

A mixed methods approach to the evaluation has been developed to achieve both breadth and depth of coverage. This has allowed triangulation of data to verify findings from different sources and methods. Figure 12 provides a timeline of SPSP-PPC collaborative events and Evaluation activities. Table 1 details all the tools applied to support the evaluation programme incorporating for each tool a synopsis of the respondents, tool purpose and the data collected. This is followed by some explanatory text to provide context in which the tools were applied and summary of how participant recruitment was conducted. Where appropriate participants were provided with an information

sheet and participant and practice site demographics were collected. Appendix 4 presents the detailed tool development, review and testing undertaken and the recruitment process each time the tool was applied, where appropriate.

In addition to the tools outlined in Table 1 a number of items of documentation were circulated by the Steering Group throughout the lifespan of the SPSP-PPC collaborative, and provide usual documentary evidence in order to inform process and impact. A total of 12 Steering Group meetings occurred during the lifespan of the project (2014-2016). SBAR (Situation, Background, Assessment, and Recommendation) Reports providing activity data were produced by each Health Board and were presented at each Steering Group meeting. The content within these reports has been used to inform parts of this report

Figure 12 provides a timeline of SPSP-PPC collaborative events and Evaluation activities.

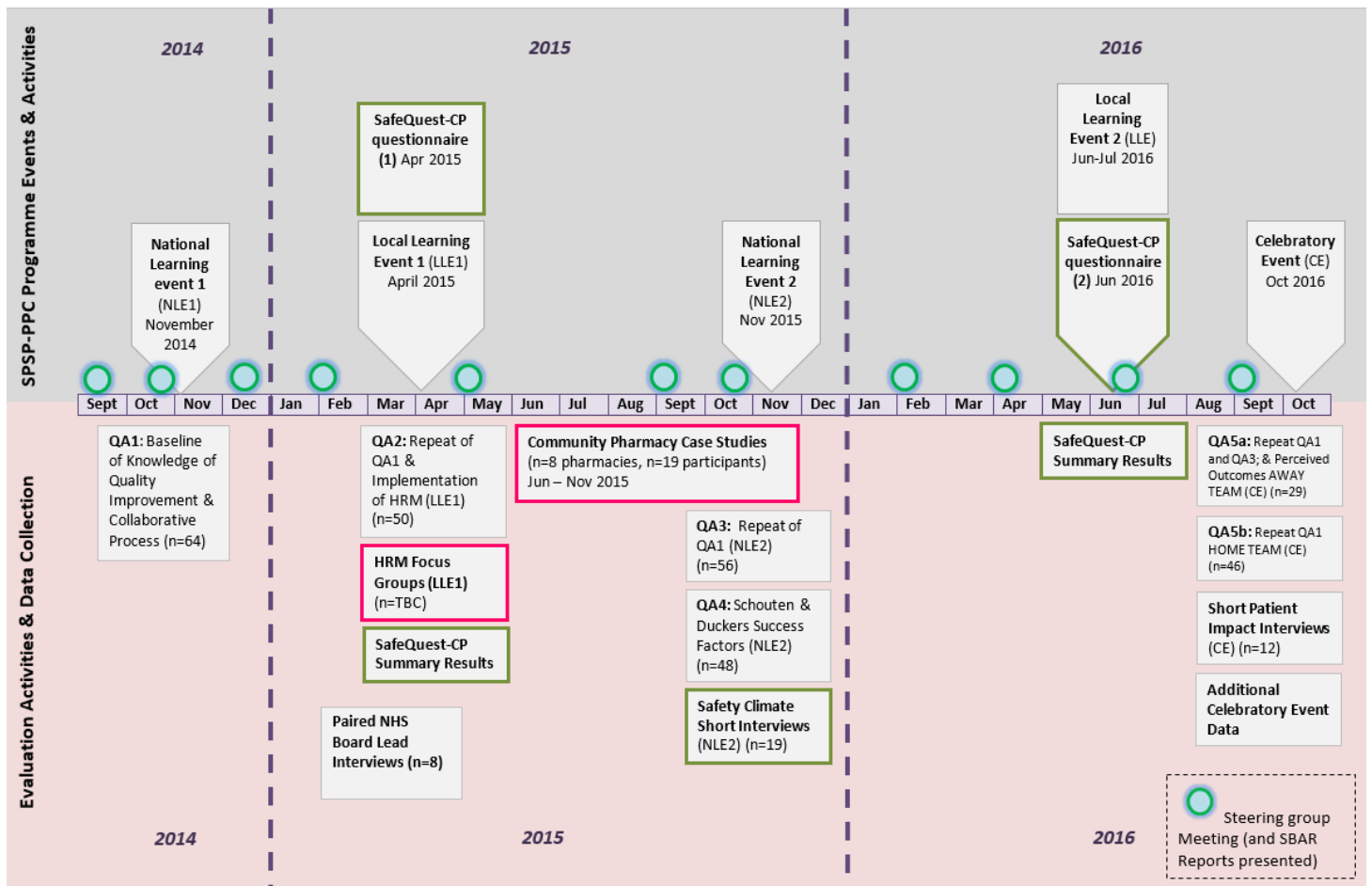


Figure 12: Timeline of SPSP-PPC Collaborative events and Evaluation Activities

Table 1: Tools Applied To Support the Evaluation Programme

TOOL	WHEN	TOTAL RESPONDENTS	DATA COLLECTED	TOOL PURPOSE
<b>Questionnaire 1 (QA1)</b>	National Learning Event (NLE1) Nov 2014	•Away Team & other delegates (n=64)	Practice site knowledge of QI methods and tools; Model for Improvement approach; Possible future issues; Support needed Focused on the learning and behaviour elements from Kirkpatrick's' model (27).	To measure baseline knowledge of QI methods and tools and the Model for Improvement approach
<b>Paired Health Board Lead Interviews</b>	February 2015	•All Health Board Clinical Leads & Facilitators (n=8)	Health Board leads account of the site recruitment process, Health Board engagement and sponsorship and early progress with implementation of the HRM Care Bundle	To gain an understanding of the Health Board collaborative setup processes and early progress within sites.
<b>Questionnaire 2 (QA2)</b>	Local Learning Event (LLE1) Mar/Apr 2015	•LLE1 attendees (Away & Home Team) (n=50)	Modified QA1 plus: Knowledge of HRM; Multidisciplinary working; Point of contact; Workload; Pharmacy support; Improvements in safe use of medicine (27, 34). Focus on the learning and behaviour elements from Kirkpatrick's' model.	To measure knowledge of QI methods/tools and progress with HRM Care Bundle implementation
<b>HRM Focus Groups</b>	Apr-May 2015	•Away & Home Team- 2 Boards (n=8)	How the HRM care bundle was being implemented in the sites drawing out any levers and challenges within practice. Thematic analysis applied	To explore how the HRM intervention was landing at the "coal-face".
<b>SafeQuest-CP</b>	April 2015	•Participating sites (n= 24)	Number of participating sites per NHS Board plus average Likert scores for each factor (leadership, teamwork, safety systems, communication, working conditions) by: NHS Board; National; Management vs non-management; Clinical vs non-clinical; Dispensing practices vs CPs (Health Board 4) using a previously validated tool (20).	The provide sites with a snapshot of their perception and emphasis on safety in context of other study sites.
<b>HRM Community Pharmacy Case Studies</b>	April – Nov 2015	•N=8 community pharmacies •N=19 interview participants	Pharmacy staff simulation of warfarin/NSAID prescription dispensing and relevant materials photographed. Staff member engagement internally within the site and with the public and multidisciplinary team. Success factors and barriers to the implementation of HRM	To create a process map detailing the steps involved in delivering the NSAID/Warfarin Care Bundle intervention process in the pharmacy.
<b>Questionnaire 3 (QA3)</b>	National Learning Event (NLE2) Nov 2015	•Away Team & other delegates (n=56)	See QA1	To examine any change in knowledge of QI methods and tools over time
<b>Questionnaire 4 (QA4)</b>	NLE2 (Nov 2015)	•Away Team (n=48)	Likert scale rating of factors known to predict success within QI collaboratives: Expert lead support; Team work; Collaborative process; Organisational support	To collate participants' views on a range of known QI collaborative predictors of success in the context of the SPSP-PPC collaborative.

			Adapted from Schouten et al's & Duckers et al's QI Collaborative Success Factors (35, 36).	
<b>SafeQuest-CP Short interviews</b>	NLE2 (Nov 2015)	•Away Team (n=19)	Access and completion of the survey; had the results been fed back; discussion and actions from the results; concerns with use.	To gain an understanding of how the SafeQuest-CP questionnaire had "landed" within sites.
<b>SafeQuest-CP Summary</b>	May 2016	•Participating pharmacies (n=18)	Number of participating sites per NHS Board plus average Likert scores for each factor (leadership, teamwork, safety systems, communication, working conditions) by: NHS Board; National; Management vs non-management; Clinical vs non-clinical; Dispensing practices vs CPs (Health Board 4) using a previously validated tool (20).	To provide sites with data of their perception and emphasis on safety 12 months after first completion and in context of other study sites.
<b>Questionnaire 5a (QA5a):</b>	Celebratory Event (CE) (Oct 2016)	•Away Team (n=29)	See QA1 See QA4 In addition site staff perceived benefits arising from the change package activities (service and patient outcome) and potential for routine integration into practice (34-36).	To examine any change in knowledge of QI methods and tools over time To collate participants' views on a range of known QI collaborative predictors of success in the context of the SPSP-PPC collaborative To capture staff perceived success of the SPSP-PPC.
<b>Questionnaire 5b (QA5b):</b>	CE (Oct 2016)	•Home Team (n=46)	See QA1	To measure Home Team knowledge of QI methods and tools at the end of the SPSP-PPC collaborative
<b>Patient impact Short interviews</b>	CE (Oct 2016)	•Away Team (n=12)	Patient impact stories	To capture examples of patient impact stories arising from being involved in the programme.

## **National Learning Event 1 (NLE1)**

The National Learning Event took place in November 2014 and was the first collective meeting of all participating pharmacies / dispensing practices and members of the Project Steering Group. The event focused on an introduction to the concept of patient safety, safety culture and core Quality Improvement methods with a focus of the HRM Care Bundle.

### ***Questionnaire 1 (QA1) Baseline Knowledge of QI & Collaborative Process***

The baseline questionnaire ascertained initial knowledge and understanding of the health board collaborative members and included: knowledge of QI methods and tools; Model for Improvement approach; possible future problems; and support needed. The questionnaire was distributed to all delegates 2 weeks in advance of the NLE1 event. Delegates were asked to return completed questionnaires at registration or completed these on arrival at the event. The final questionnaire is included in Appendix 5.

## **Paired Health Board Lead Interviews**

Interviews were conducted in February 2015 in each of the four Health Boards with the Health Board Leads. A semi-structured interview schedule (Appendix 6) with a focus on three main areas; experience, recruitment of sites and engagement was conducted via conference call. The paired interview allowed a better understanding of the Health Board collaborative setup processes and the progress within Health Boards thus far.

## **Local Learning Event 1 (LLE1)**

The first Local Learning Events took place in March - April 2015. These were smaller board-specific meetings involving those staff participating in the SPSP-PPC collaborative from community pharmacies / dispensing practices. The aim of the event was for participants to share their experiences and activities thus far in the programme.

### ***Questionnaire 2 (QA2) Knowledge of QI and Collaborative Process (Modified QA1) & HRM Implementation***

The first part of QA2 was based on a modified QA1, with the addition of questions on the HRM element of the SPSP-PPC being tested at this time point in the study sites. The final questionnaire is included in Appendix 7.

The questionnaire was sent to all registered LLE attendees 1 week before the event. Delegates were asked to return completed questionnaires at registration or completed these on arrival at the event. Within Health Board 4 the LLE was run remotely and participants were asked to return by email. Non-returning staff were reminded once to maximise returns.

### ***HRM Focus Groups with Pharmacy Staff***

Focus groups were run with Away and Home Team members in two Health Boards April - May 2015 (one testing each of the NSAIDs and Warfarin Care Bundle) to explore how the HRM intervention was landing at the "coal-face". Recruitment of participants was through the LLE1 and by email to all study



sites in each Health Board with remuneration of £100 being offered for attendance. The focus groups lasted approximately 1 hour and took place in the evening. The interview schedule was based on common themes derived from review of the QA2 open-ended questions. The focus group schedule is included in Appendix 8.

### **SafeQuest-CP Safety Climate Survey 2015**

The SafeQuest Safety Climate Survey was first administered in April 2015 (Appendix 2). The aim of the survey was to provide sites with a snapshot of their perception and emphasis on safety, and to provide them means to improve safety culture in a blameless and supportive manner. Within each site, the manager or a nominated lead was to encourage staff to complete the online survey. Post-completion, site managers were instructed to run off the results and disseminate and discuss them with the team, making appropriate changes to practice where needed.

All staff who worked in sites participating in the SPSP-PPC collaborative were asked to complete it, regardless of whether they attended any of the learning events or not. Participants were provided a guide by which to complete the survey and utilise the results within their practice, as they would be provided feedback on how they scored against the national average.

#### ***Safety Climate Survey Summary Results***

The Evaluation Team were provided with a summary of results at Board and national level of the SafeQuest-CP tool by SPSP programme national leads.

### **HRM Community Pharmacy Case Studies**

Case studies were conducted in eight community pharmacies between June and November 2015 (four pharmacies in June/July, and four pharmacies October/November). Pharmacy staff simulated the process undertaken when a warfarin/NSAID prescription was presented at the pharmacy. This was audio recorded and any relevant resource materials (e.g. education posters, alert stickers, etc.) photographed. This was used to create a process map detailing the steps involved in delivering the care bundle intervention which was emailed to the community pharmacist for validation. The information from the process maps were collated, commonalities were identified and were used to create an overarching process map for NSAIDs and warfarin (Appendix 9). Subsequently, the generic process maps were shared for review at the NLE2 and also tested in a further four community pharmacies for applicability within their system.

### **National Learning Event 2 (NLE2)**

The second National learning Event (NLE2) took place over 2 days in November 2015 and was attended by all SPSP-PPC participating pharmacy / dispensing practice representatives and members of the Project Steering Group. The aim of the event was to share progress to date, introduce the importance of leadership in patient safety and design the Medicines Reconciliation Care Bundle.

#### ***Questionnaire 3 (QA3) Knowledge of QI and Collaborative Process (Modified QA1)***

QA3 was a repeat of the Modified QA1, 12 months following the NLE1 to examine any change in knowledge base of participants over time. The questionnaire is included in Appendix 10.

All registered delegates were invited to complete the questionnaire. The questionnaires were distributed via email two weeks prior to the event, and a reminder was sent approximately 1 week later. Delegates were asked to return completed questionnaires at registration or completed these on arrival at the event. Staff unable to attend were encouraged to return the questionnaire by post.

#### ***Questionnaire 4 (QA4) Schouten et al's & Duckers et al's Success Factors***

In order to explore the QI collaborative predictors of success within sites, two psychometrically previously validated questionnaires (35, 36) were adapted for use within the SPSP programme (community pharmacy and dispensing practice versions). Following a development process QA4 focused on four factors suggested to predict success within QI collaborative: expert lead support; team work; collaborative process; and organisational support. The questionnaires are included in Appendix 11.

All registered delegates were invited to complete the questionnaire in a similar process as for QA3.

#### ***Short Safety Climate Interviews***

In order to gain an understanding of how the SafeQuest-CP questionnaire had “landed” within sites, a short interview schedule was designed to capture early response to the tool and how the results had been used in the sites. Researchers approached Away team delegates opportunistically at the NLE2 who were invited to participate in a brief 5-10 min interview. The schedule is included in Appendix 12.

#### **SafeQuest-CP Safety Climate Survey 2016**

The SafeQuest Safety-CP Climate Survey was repeated in June 2016 (Appendix 2).

#### ***Safety Climate Survey Summary Results***

The Evaluation Team were provided with a summary of results of the SafeQuest-CP tool by SPSP programme national leads.

#### **Local Learning Event 2 (LLE2)**

A second Local Learning (LLE2) event occurred in June – July 2016 with a view to allow participating pharmacy / dispensing practice staff to share their learning to date with the Medicines Reconciliation Care Bundle.

#### **Celebratory Event (CE)**

The Celebratory Event (CE) took place in October 2016 and provided the opportunity to reflect the successes of the SPSP-PPC collaborative, share learning, and discuss potential areas for roll-out nationally.

#### ***Questionnaire 5a (QA5a): Impact - Knowledge of QI and Collaborative Approach (modified QA1); modified QA4; and Perceived Outcomes***

The final summative evaluation of the SPSP-PPC collaborative took the form of an impact questionnaire comprised of three sections:

- examination of staff knowledge and behaviour (modified QA1)
- organisation context and success factors (modified QA4);
- New section to gain an understanding of the perceived benefits arising from the change package activities (service and patient outcome) and potential for routine integration into practice.

The full questionnaire is included in Appendix 13. All Away Team delegates attending the CE were invited to complete the questionnaire. The questionnaires were mailed to each participating site 1 week prior the CE. Away Team members were asked to bring any completed questionnaires to the CE. In the event of possible non-attendance, all sites were asked to post these to the evaluation team. Sites received reminder telephone calls 10-14 days post the CE.

#### ***Questionnaire 5b (QA5b): Knowledge of QI and Collaborative Approach (modified QA1)***

QA5b was aimed at Home Team members and was a duplicate of modified QA1. The questionnaire is included in Appendix 14.

Copies of the questionnaires (based on estimated staff numbers) were posted to each study site 1 week prior the SPSP-PPC CE. The site manager was asked to distribute to all Home Team members and for all completed forms to be sealed by staff in an envelope to assure anonymity per to collation by the manager. Away Team members were asked to bring any completed questionnaires to the CE. In the event of possible non-attendance, all sites were asked to post these to the evaluation team. Sites received reminder telephone calls 10-14 days post the CE.

#### ***Short Patient Impact interviews***

In order to capture how each element of the SPSP-PPC collaborative (High Risk Medicines, Medicines Reconciliation and Safety Climate Survey) impacted on patients a short interview schedule was designed to provide the opportunity to describe examples of patient impact stories arising from being involved the programme. The schedule is included in Appendix 15. Away team delegates where approached opportunistically at the CE and invited to participate in a brief 5-10 min interview.

#### **Additional Supplementary Data**

Additional recordings (“audio notes”) were made during the CE. Participants on the day were asked to write their opinions on the event on post-it notes and display them. Photographs of these notes were taken by the Evaluation Team. Steering Group minutes and associated SBAR (situation, background, assessment, report) reports were also collated.

## **DATA ANALYSIS**

The data analysis methods for each data element are presented in Figure 13.

DATA SOURCE	FORMAL ANALYSIS METHOD	RESEARCH QUESTION
<b>QA1 – QA5b</b>	All data entered into Microsoft Excel, with 20% of the data entry validated by a second researcher to ensure validity. Questionnaire Statement Likert Scale responses were coded as follows, depending on the statement type: 1 = Not at all / Strongly Disagree 2 = To a very limited extent / Disagree 3 = To a limited extent / Slightly Disagree 4 = To a moderate extent / Neutral 5 = To a considerable extent / Slightly Agree 6 = To a great extent / Agree 7 = To a very great extent / Strongly Agree Descriptive statistics (Modes and Medians) were calculated in order to describe responses	<b>1-4</b>
<b>HRM Focus Groups</b>	The HRM Focus Groups were transcribed using an intelligent verbatim approach and coded thematically using the software package <i>NVivo</i> .	<b>1-2</b>
<b>NLE2 Safety Climate Short Interviews</b>	The NLE2 Short Interview data was transcribed using an intelligent verbatim approach and coded thematically using the software package <i>NVivo</i> .	<b>4</b>
<b>CE Short Patient Impact Interviews</b>	The CE Short Interviews were transcribed using an intelligent verbatim approach. The data underwent a deductive analysis using the domains from Proctor et al's taxonomy (34). Interviews were deductively mapped to the taxonomy concepts independently by two researchers who then met and compared their categorisation. Any disagreements were resolved by negotiation. The ordered dataset then was thematically analysed within each category.	<b>2-4</b>
<b>Case Study HRM Simulations</b>	Simulations of HRM prescribing and dispensing were audio recorded but not transcribed. This data was compiled with photograph evidence of associated tools and a process map was developed (see Methods section). No other formal analysis of the data was conducted.	<b>1-2</b>
<b>Other Data</b>	Supplementary data such as WebEx notes, Steering Group Minutes, SBARs etc. have been used to supplement information and learning from the analysis of the data collected through the formal evaluation activities and has undergone no formal data analysis.	<b>1-4</b>

Figure 13: Data Analysis Methods

## RESULTS

### Study Sites and Participants

Table 2 displays the demographics of all participants for all methods applied throughout the evaluation programme. This extends beyond the Home and Away Team members to Health Board Leads and Steering Group members. It is estimated that a total of 187 unique individuals participated in the evaluation at some point. However we are unable to establish whether Home Team members who completed questionnaires did or did not participate in earlier Focus Groups or Case Studies.

Table 2: Study Sites and Participants

	QA1 BASELINE (n=64)†	QA2 (n=50)	HRM CASE STUDIES (n=30)	QA3 (n=56)	HRM FOCUS GROUPS†(n=6)	PAIRED HEALTH BOARD LEAD INTERVIEWS (n=8)	QA4 (n=48)	NLE 2 Short Safety Climate Interviews (n=19)	CE Short Patient Impact Interviews (n=13)	QA5a (n=29)	QA5b HOME TEAM (n=46)
<b>No. SITES /TEAMS</b>	26 CPs/ 2 DPs	26 CPs */ 1 DP	8 CPs	25 CPs* / 2 DPs	4 CPs *	4	26 CPs / 2 DPs	16 CP / 1 DP	10 CP* / 1 DP	19 CPs / 2 DPs	15 CPs / 1 DP
<b>GENDER</b>											
Male	11	12	8	10	1	2	10	6	3	9	5
Female	53	38	23	43*	3	6	34	13	10	20	40
<b>ROLE IN COLLABORATIVE</b>											
Board Clinical Lead	5	-	-	3	1	4	1	1	1	-	-
Board Facilitator	4	-	-	5	-	4	1	1	1	-	-
Staff from CP / DP	50	49	-	37	-	-	36	16	10	29	46
Other / Unknown	5	1	-	6	-	-	5	-	1	-	-
<b>JOB ROLE</b>											
Pharmacist Owner	6	7	2	5	1	-	5	1	2	2	-
Pharmacist Branch Manager	14	15	6	13	2	-	13	6	4	11	2
Second Pharmacist	2	3	3	2	1	-	2	2	2	2	1
Accredited Checking Technician	6	4	2	2	-	-	2	1	1	3	1
Locum Pharmacist	-	-	1	-	-	-	-	-	-	-	2
Technician	7	7	-	4	-	-	4	1	1	2	7
Relief pharmacist	1	-	-	-	-	-	-	-	-	-	-
Dispensing Staff	6	6	12	5	-	-	3	3	1	4	20
Pre-Reg	1	3	2	4	-	-	4	1	-	-	1
Counter Assistant	-	-	4	-	-	-	-	-	-	-	10
Other / Unknown	3	3	-	5	-	-	5	3	1	1	-
<b>YEARS IN JOB ROLE</b>											
<1	8	9	2	13	1	-	13	5	1	-	3
1—5	17	19	7	10	1	-	10	4	1	12	19
6-10	13	14	9	5	-	-	5	4	4	8	14
11-15	1	2	4	3	1	-	2	-	2	3	5
16-20	3	2	2	4	1	-	4	2	1	3	2
>20	5	3	4	6	-	-	6	3	2	3	3

†One pharmacy withdrew from the evaluation and therefore their data is not included  
 Number of \* indicates some no responses / unknown data

In total, 60 Away Team participants and a minimum of 46 Home Team participants took part. Participants other than Home or Away team members (n=24) also contributed throughout the programme, as well as Health Board Leads (n=8). Figure 14 displays how many Away Team members had been involved in the collaborative from the beginning, for 1-2 years and for less than 1 year (tested in QA5a at the Celebratory Event in 2016):

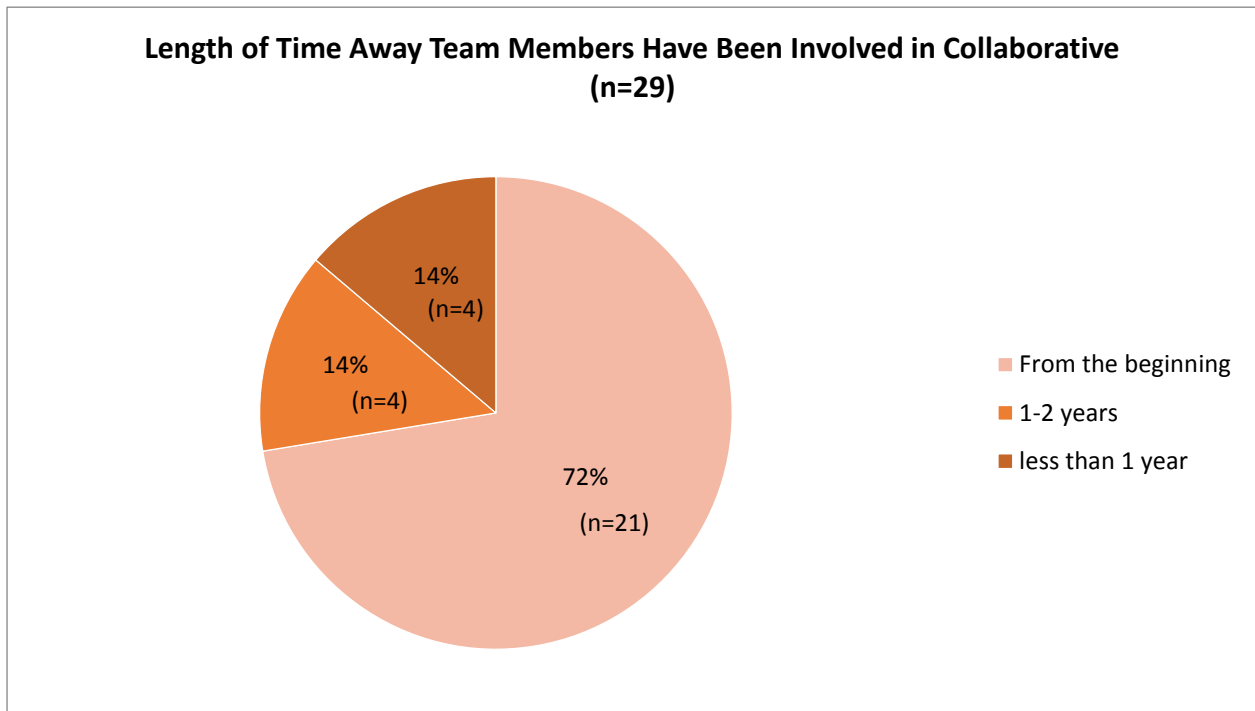


Figure 14: Away Team Duration of Participation in Collaborative

Figure 15 shows the total number of questionnaires Away Team members completed, with the maximum being 5. As shown, most Away Team members completed 4 out of the 5 questionnaires, with QA2 being most completed (n=47).

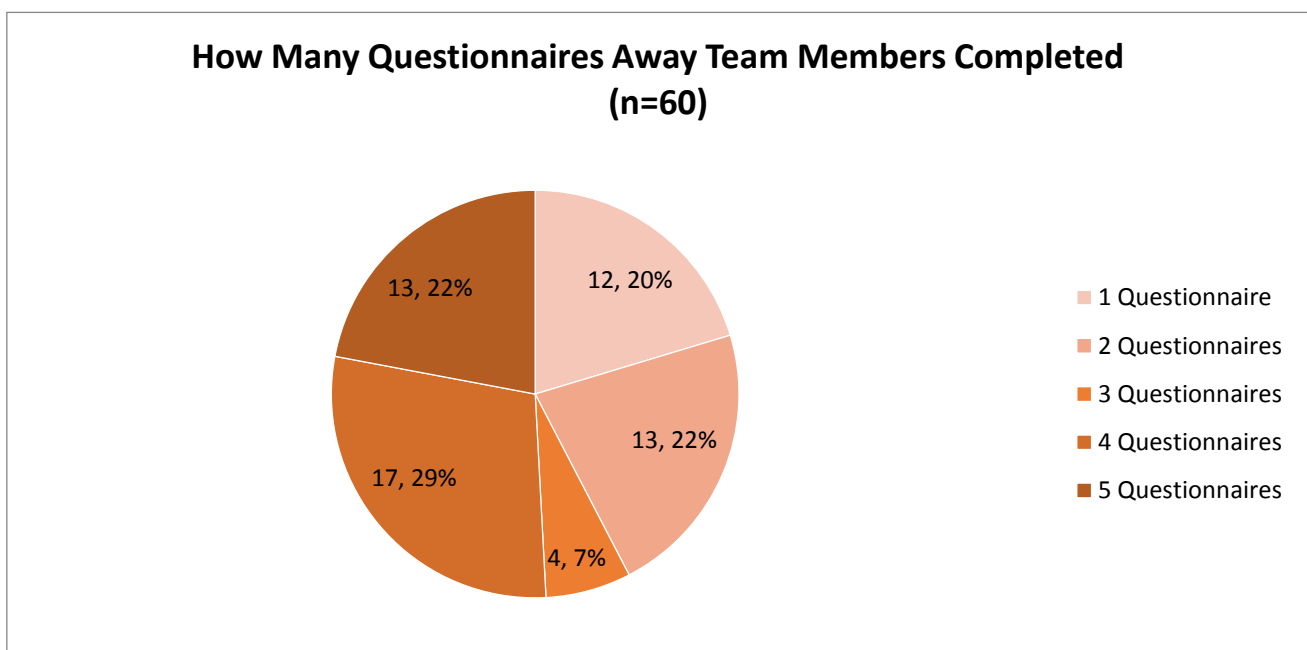


Figure 15: Number of Questionnaires Completed by Away Team

**a. EVALUATION QUESTION 1: To what extent was the overall programme a success? What were the barriers/successes to engagement at community pharmacy / dispensing practice and health board level?**

**i. KNOWLEDGE & BEHAVIOUR**

**Data Used in Analysis**

- Select data from QA1, QA2, QA3, QA4 and QA5a
- Community Pharmacy HRM Case Studies
- HRM Focus Groups

The evaluation has been designed to explore both: the delivery of the collaborative approach in support of the change packages; and how the pharmacy/dispensing practice sites are utilising the change packages. This section of the results will be reported under Kirkpatrick's Learning Evaluation model in order to understand the effectiveness of the overall SPSP-PPC collaborative (27). This will allow theories to be developed about mechanisms (for example the tools used or changes skills and behaviours) and contexts (for example health board or type of pharmacy) underpinning the measures of success such as the quantitative reliability data.

***Level 1: Reaction***

*Reaction: The degree to which participants find the training favourable, engaging and relevant to their jobs.*

As the concept of patient safety may have been unfamiliar to some community pharmacy staff, it was important to ascertain the thoughts of Away Team members around the relevance of patient safety as an SPSP-PPC collaborative element. Figure 16 shows the responses from Away Team members at three points between baseline (2014 at NLE1) and the Celebratory Event in 2016. There was no change in median response to "Patient safety is primarily a hospital issue" across all three time points, showing that throughout programme participation, most felt that patient safety was not primarily a hospital issue, and was relevant in the context of community pharmacy.



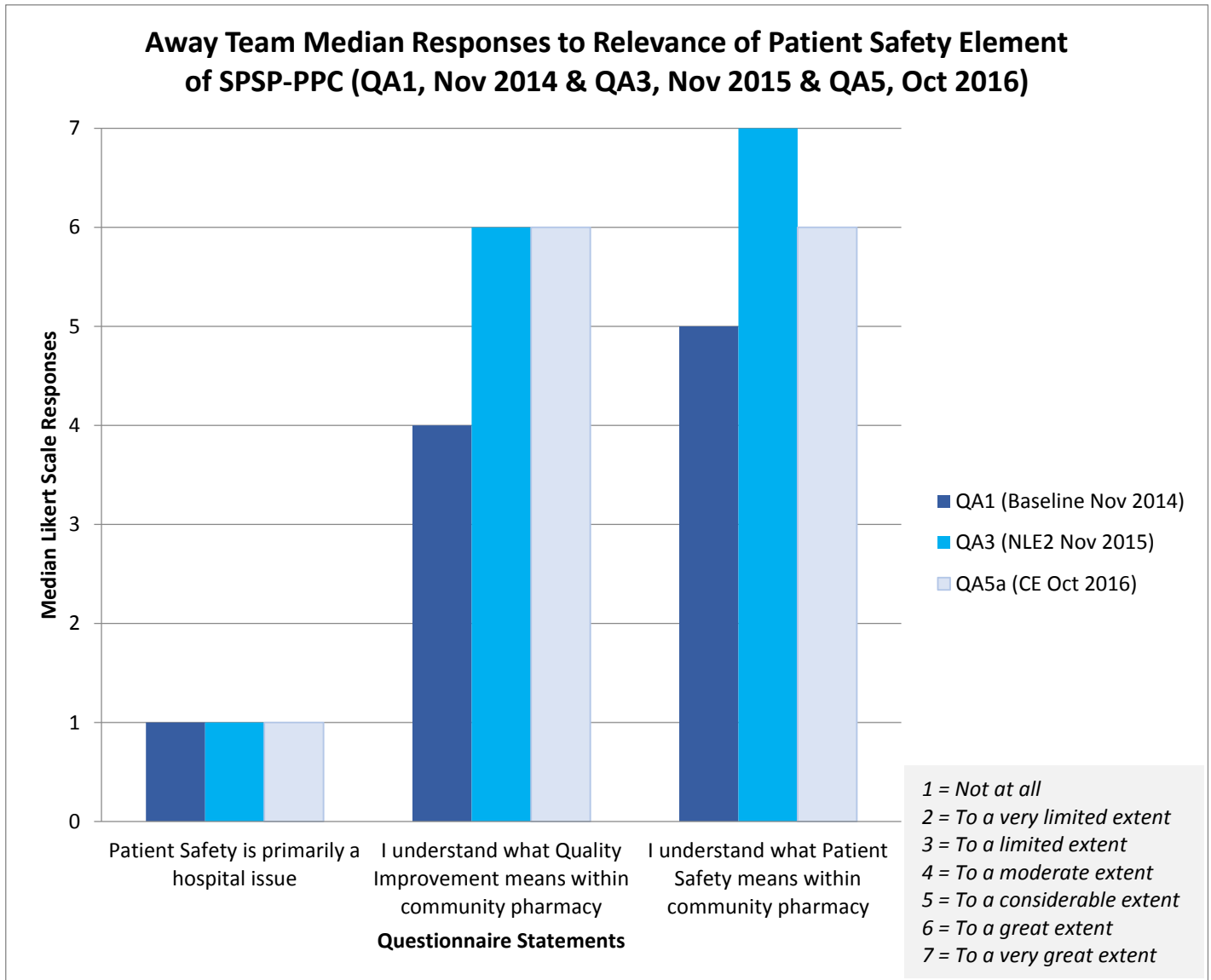


Figure 16: Away Team Responses to Relevance of Patient Safety Element

Furthermore, there is a sharp increase in the understanding of both the concepts of Quality Improvement and Patient Safety within community pharmacy between the baseline (2014) and NLE2 event 1 year later, which is maintained / slightly decreased at testing over the following year, showing that the programme elements were engaging to staff to an extent to increase and sustain awareness.

Figure 17 shows further median responses from Away Team members at the end of the SPSP-PPC collaborative (CE, Oct 2016) regarding their thoughts on the relevance of and their engagement with the three change packages: High Risk Medicines; Medicines Reconciliation; and Safety Culture:

## Away Team Median Responses to Relevance of and Engagement with SPSP-PPC collaborative Elements (QA5a, Oct 2016)

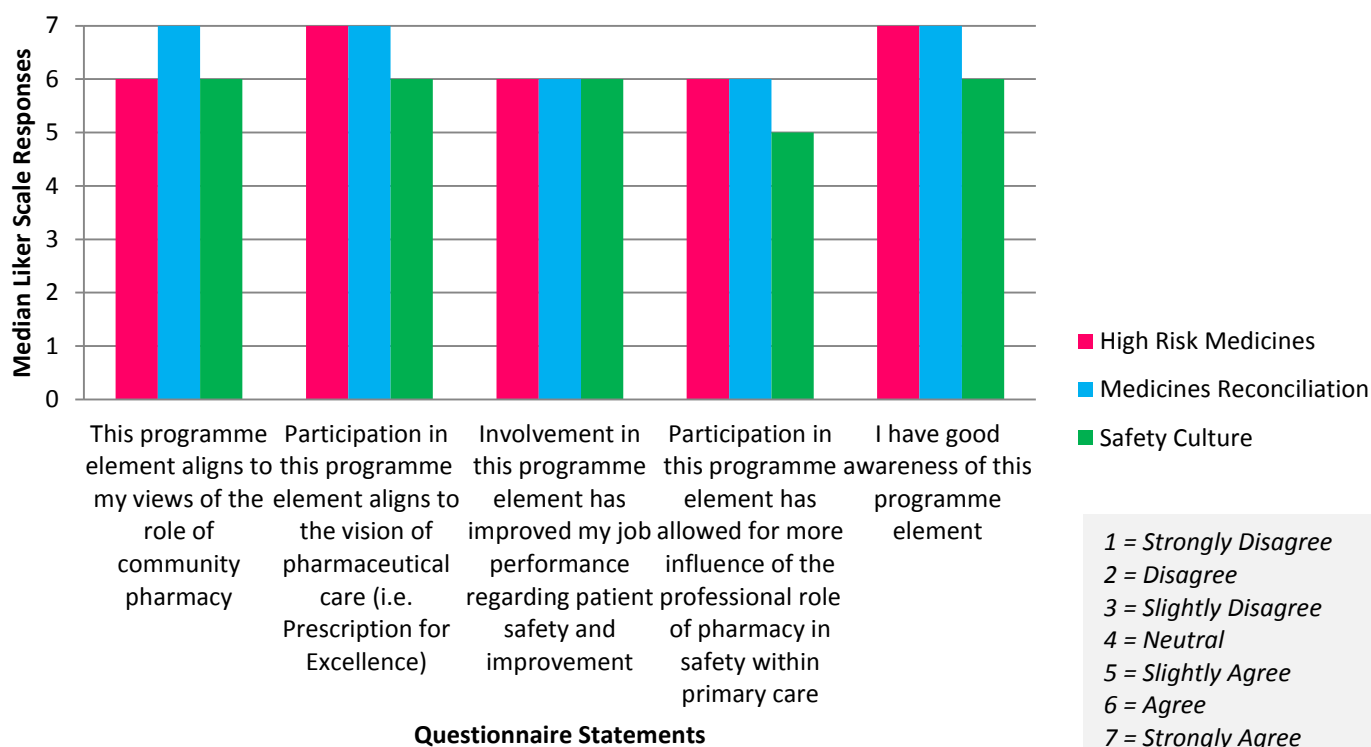


Figure 17: Away Team Response to Relevant of and Engagement with Collaborative Elements

All three elements elicited median responses ranging mostly between Agree and Strongly Agree, however there is a trend that High Risk Medicines and Medicines Reconciliation were considered as more relevant and influential to the role of the community pharmacy/dispensing practices and professionally had a more positive impact on job performance. The most contrasts can be seen between High Risk Medicines and Safety Culture in the statements “Participation in this programme element aligns to the vision of pharmaceutical care” and “I have good awareness of this programme element” which may suggest that Away Team members see a more direct link between HRM and pharmaceutical care in general than with the Safety Culture element, perhaps due to the direct patient involvement.

Finally at baseline, Away Team members were asked to provide any thoughts they had on what they thought the main benefits or successes to involvement in the SPSP-PPC collaborative would be. Table 3 displays a range of the responses provided, categorised by theme. Of the 45 Away Team QA1 (2014) responders, 32 provided an answer.

Table 3: Away Team Perceived Benefits & Successes of Participation

<b>Improve Own Knowledge &amp; Confidence</b>
<p>“Improve my personal knowledge of QI &amp; networking within a wider NHS &amp; organisational structure.”</p> <p>“I hope to learn more about SPSP.”</p> <p>“Building my own confidence.”</p>
<b>Improve Patient Care</b>
<p>“I think it will improve my ability to provide safe care for patients...to take patient safety to the next level. More reliable medicine reconciliation...with the patient being the centre of the process involving them.</p>
<b>Improved Patient Safety</b>
<p>Greater knowledge and understanding ... leading to increased patient safety in the pharmacy.”</p> <p>“Improved Patient Safety, improved Safety Culture in team.”</p>
<b>Improve Processes</b>
<p>“Improve processes for high risk meds and meds rec in community pharmacies.”</p> <p>“Learning how [Models for Improvement] can be implemented so that they become part of routine practice in every pharmacy.”</p> <p>“Improved records/statistics for future planning.”</p>
<b>Maximise Role of Community Pharmacy</b>
<p>“Identifying a clearer role for community pharmacy in both reducing risk of high risk medicines and improving medicines reconciliation.”</p> <p>“Identification of a greater and more involved role of Community Pharmacy in Patient Safety.”</p> <p>“Reducing professional isolation for pharmacists.”</p>
<b>Improved Networking, Sharing &amp; Communication</b>
<p>“Better communication between all care providers.”</p> <p>“More confidence in contacting other primary care professionals.”</p> <p>“Networking with other pharmacists.”</p>
<b>Involve the Whole Pharmacy Team</b>
<p>“Improvement of the safety climate within community pharmacy, from all members of staff whatever their role.”</p> <p>“Involving the whole pharmacy team in a project.”</p>

During the Community Pharmacy HRM Case studies, various members of the pharmacy team were interviewed and asked about their experiences of the programme. The HRM Case studies occurred between June and November 2015. Participants mainly spoke of how they were implementing the HRM element of the programme, but also provided insight into the successes and challenges of participation. The main overall challenge reported was time, but this mainly related to the practical delivery of the care bundles as opposed to participation in the learning events. Very few comments were made about the frequency of training events and the pressures this posed. Some comments were made about aspects of the QI methods being demanding:

*“The difficult thing and the time consuming bit is this bit, the PDSA cycle because I'm not used to doing something like this. So I think this is taking me quite a while to work out how to do it. Like I'm never sure for example where to start in the cycle.”*

*(Branch Manager, Health Board 4)*

For this participant, there was a lack of clarity on what point in the PDSA cycle they were to start and that completing and submitting the cycles was onerous. However, several participants could not provide examples of any challenges to participation when prompted, one participant commenting:

*“It’s quite an important role to be quite honest because it’s something that a lot of patients deal with and to have them understand better and us have better understanding of the patients...it works with the pharmacy well.”*  
(Accredited Checking technician, Health Board 1)

Additional qualitative data was gathered at the HRM focus groups (April – May 2015), with some participant’s discussing how relevant they thought the HRM implementation was to their work and to community pharmacy as a whole. Comments were generally very positive, with participants agreeing that the HRM element of the programme fits well within the culture of change in community pharmacy:

*“Things are changing with [pharmacy] anyway, I mean ideally we’ll be prescribing within the next ten years...so you’re doing more clinical things, the payment’s changed, you’ve got to do more patient care records and stuff like that.”*  
(Pharmacy Manager, Health Board 2)

In terms of the training received, staff reported that it was a motivating factor at the beginning, and contributed towards them feeling encouraged and engaged. However, there was a recognition that it was difficult to get those staff who had not received any training to feel as passionately about SPSP-PPC:

*“I mean it’s fine now but I think back then at the start it was quite hard to get [the other staff] enthusiastic about it because they hadn’t been to the training and we were all fired up and ready to go.”*  
(Pharmacy Manager, Health Board 2)

Another participant in this focus group went on to say that they felt that this lack of involvement in any direct training for Home Team members made it difficult to have them completing tasks associated with the programme:

*“ I think staff sometimes see it as just something else they’ve got to do...I don’t quite know how to portray it any different, because I am asking them-it is more things you’ve to do in your day and it’s-it’s difficult.”*  
(Pharmacist, Health Board 2)

Although the training was a motivating factor for some, one participant did say that the initial “high” after the training dissipated quickly, leaving them feeling less “fired-up” once they had returned to day-to-day activity.

As well as comments specific to the training, staff did express their views on the associated resources they were provided. Stories around spreadsheets with inaccurate data and patient lists that were out of date were shared in the focus groups. In reference to the original QI training materials, the original “basic” materials were valued, yet some of the more lengthy additional materials weren’t used due to a number of reasons, mainly a lack of practicality:

*“The QI tools that we’ve had I think are more theoretical than practical. I don’t have several hours...the one I’m thinking of is the fish diagram that would take so long to complete really to a substantial level of its purposes, it’s just not really feasible.”*

*(Trainee Technician, Health Board 1)*

This participant also highlighted that now they are in the depths of participation, continually updating their PDSA cycles and small tests of change was proving challenging. They found that changes were made and were successful, but that finding additional tweaks to make was difficult and were time consuming to generate when no real sizable benefit was realised. Therefore, although the tools were beneficial, the constant expectation of engagement with the tools was often time consuming and work-generating, and was thus viewed less favourably as the programme progressed.

***Conclusions: From the data we can suggest that Away Team members had a positive reaction to their engagement with the SPSP-PPC collaborative, with some of their aspirations for involvement being around an increase in knowledge and an application of that knowledge to improve processes, care, safety, and collaboration. The training was viewed positively and provided some Away Team members with a high level of motivation at the start. Utilising the training materials however was not always feasible in the participating sites due to work pressures.***

## **Level 2: Learning**

*Learning: The degree to which participants acquire the intended knowledge, skills, attitude, confidence and commitment based on their participation in the training.*

Away Team participants were provided training on the variety of tools that were to be used for each of the elements in this QI collaborative. Various questions contained within the range of questionnaires applied were designed to assess participant learning throughout the programme. Figures 18-20 shows the level of agreement to statements around understanding, knowledge and confidence of the QI tools at various points in time:

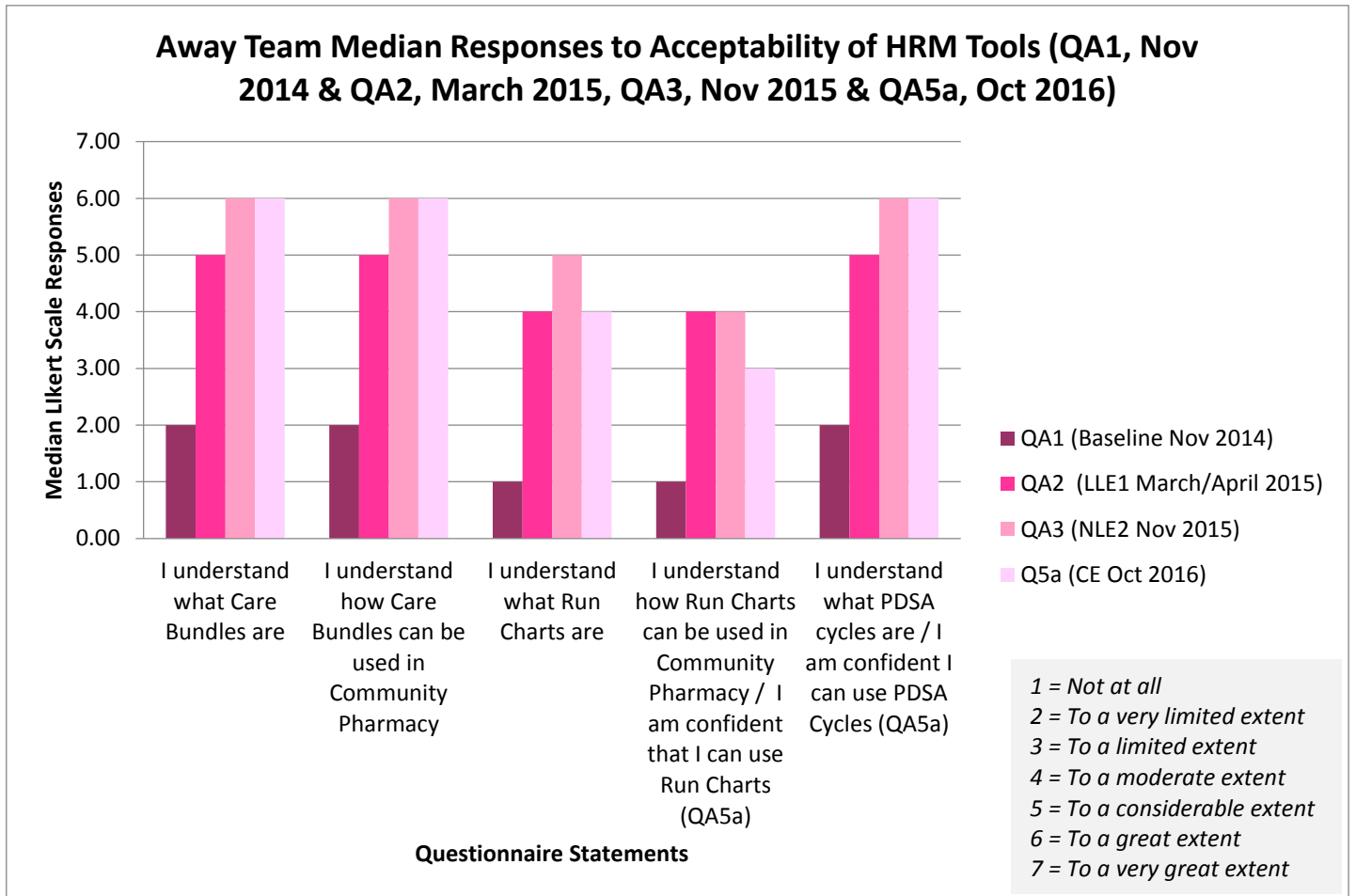


Figure 18: Away Team Response to Acceptability of HRM Tools

From the QI tool-related questions, it appears that there was a general overall increase in knowledge and understanding of the tools between 2014 and March 2015, with a slight dip in overall agreement between Nov 2015 and the CE in 2016 regarding Run Charts specifically, however this may be attributable to the lower response rate to this questionnaire.

Figure 19 shows the overall agreement with statements around understanding of and confidence in using the Model for Improvement.

### Away Team Median Responses to Knowledge & Confidence in Model for Improvement (QA1, Nov 2014 & QA2, March 2015 & QA3, Oct 2016)

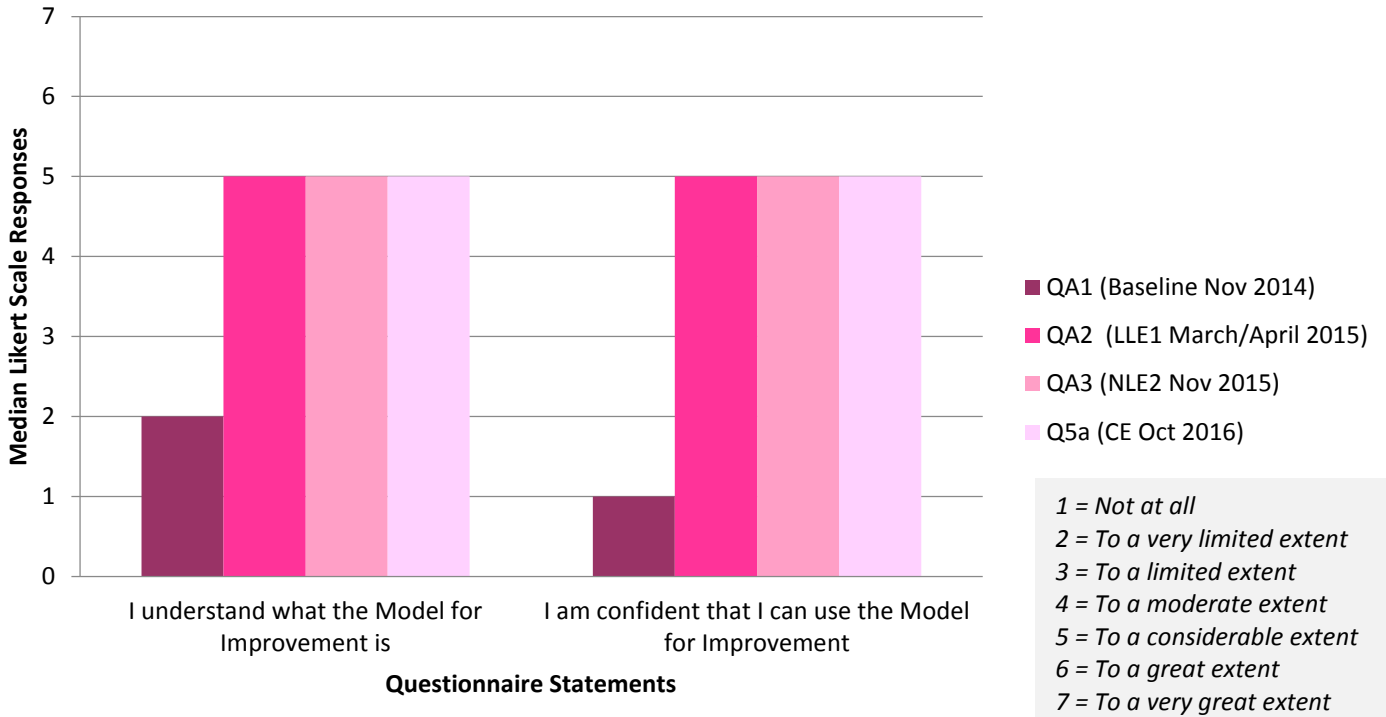


Figure 19: Away Team Response to Knowledge & Confidence of MI

Once again, a sharp increase in understanding and confidence in use of the model is observed between NLE1 (2014) and LLE1/NLE2 (2015) with the overall effect then sustained to the end of 2016. Figure 20 displays the level of general understanding at specific times through the programme for each of the change packages.

### Away Team Median Responses to Understanding of HRM, MR and Patient Safety (QA1, Nov 2014 & QA3, Nov 2015 & QA5a, Oct 2016)

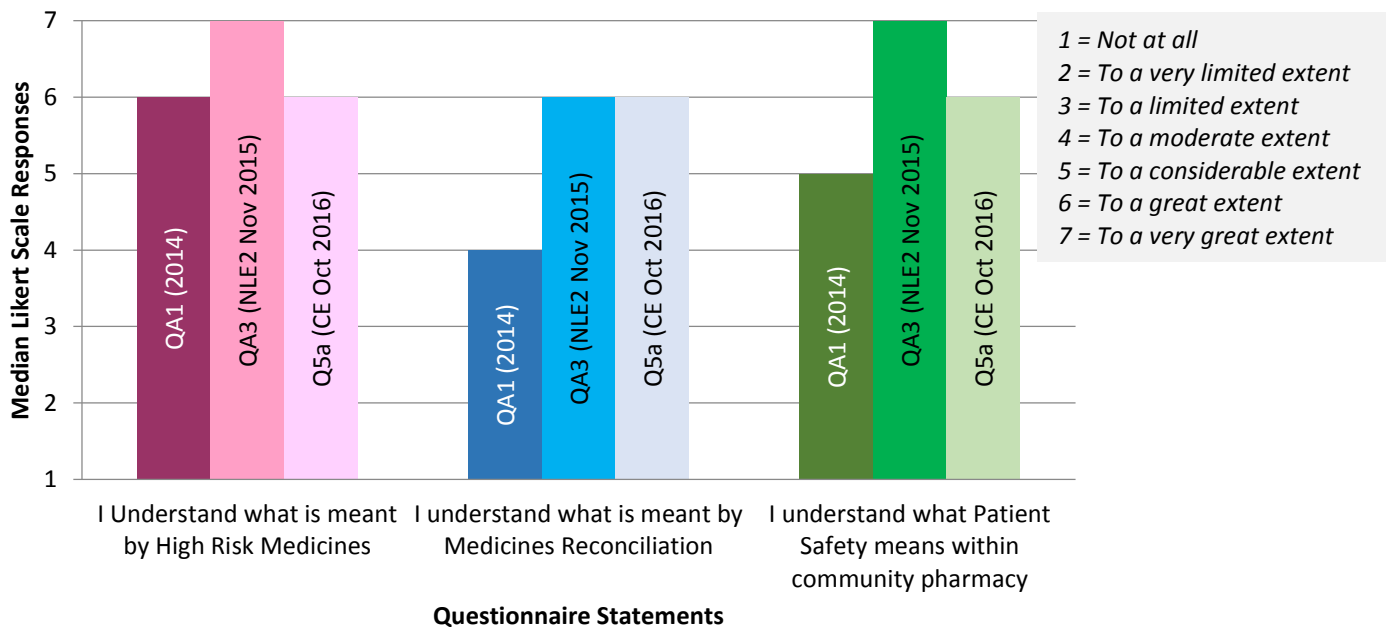


Figure 20: Away Team Response to Understanding of Collaborative Elements

There is an overall upward trend in Away Team understanding of the various change packages, with positive differences in median response rates between scores taken at Baseline (2014) and NLE2 (2015), which is mostly sustained for the following year.

Interestingly, Figure 21 shows the difference between Away Team and Home Team responses to questions around the knowledge and confidence in use of SPSP-PPC collaborative tools at the Celebratory Event (QA5a&b). What can be observed is a stark contrast between Away and Home Team understanding of the tools and elements. The most divisive statements were around understanding Run Charts and their use, understanding Driver Diagrams and understanding how PDSA cycles can be used.



## Away Team vs Home Team Median Responses Regarding Understanding of and Confidence in Using SPSP-PPC Tools (QA5a and QA5b, Oct 2016)

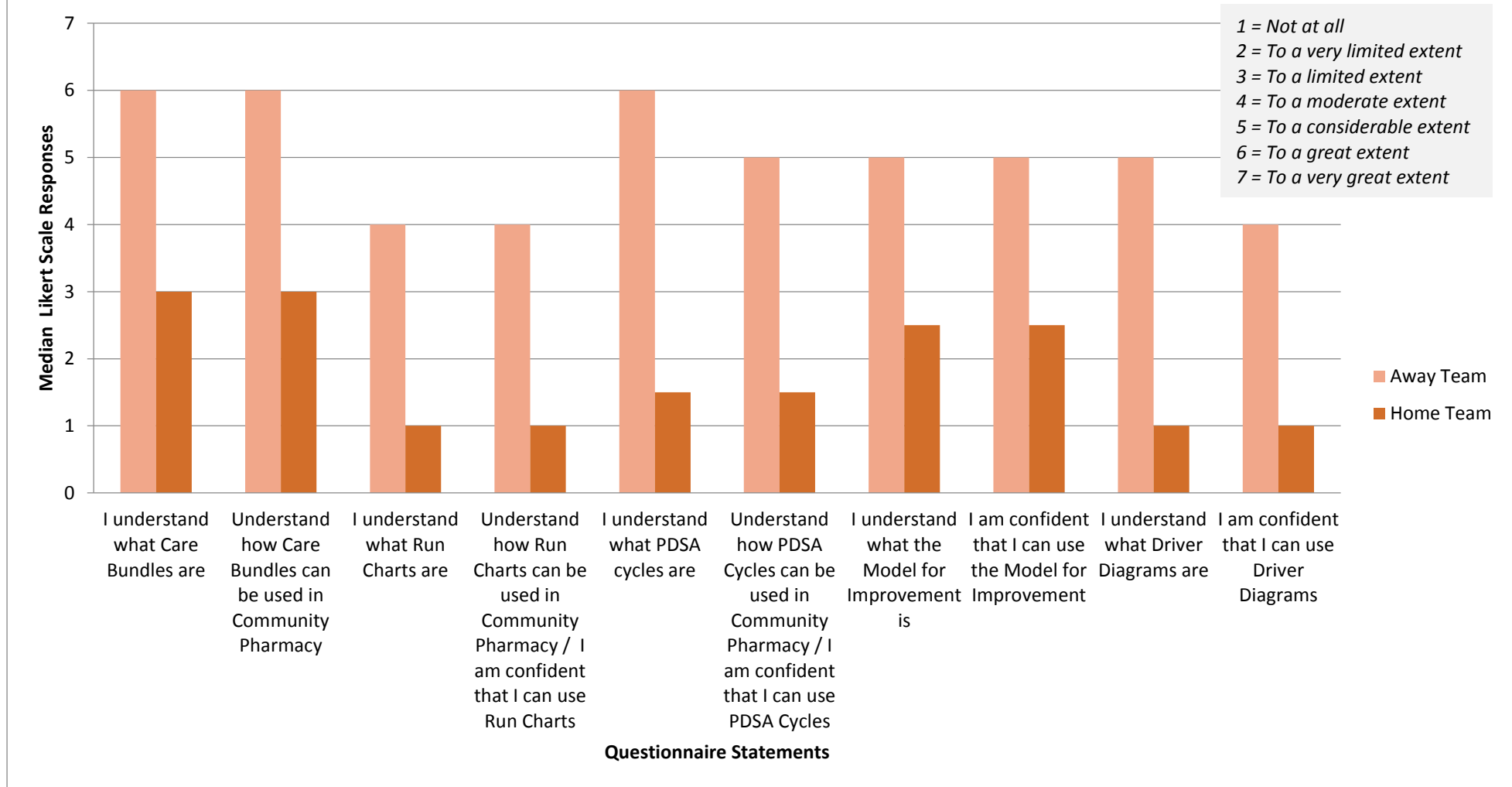


Figure 21: Away vs Home Team Response to Understanding of & Confidence in Element Tools

**Conclusions: Understanding and knowledge of SPSP-PPC tools and programme elements was low at NLE1 for Away Team members, yet a sharp and sustained increase over the following 2 years is observed in knowledge, understanding and confidence in the use and application of these tools and change packages. This indicates that the training involved at NLE1 was sufficient in facilitating participant learning. What is lacking however is the dissemination of this learning to the Home Team members.**

**Level 3: Behaviour**

*Behaviour: The degree to which participants apply what they have learned during training when they are back on the job.*

To assess any changes in behaviour as a result of learning, questions were included in QA5a and QA5b to measure the uptake and use of the tools at the end of the study programme (October 2016) (Figure 22):

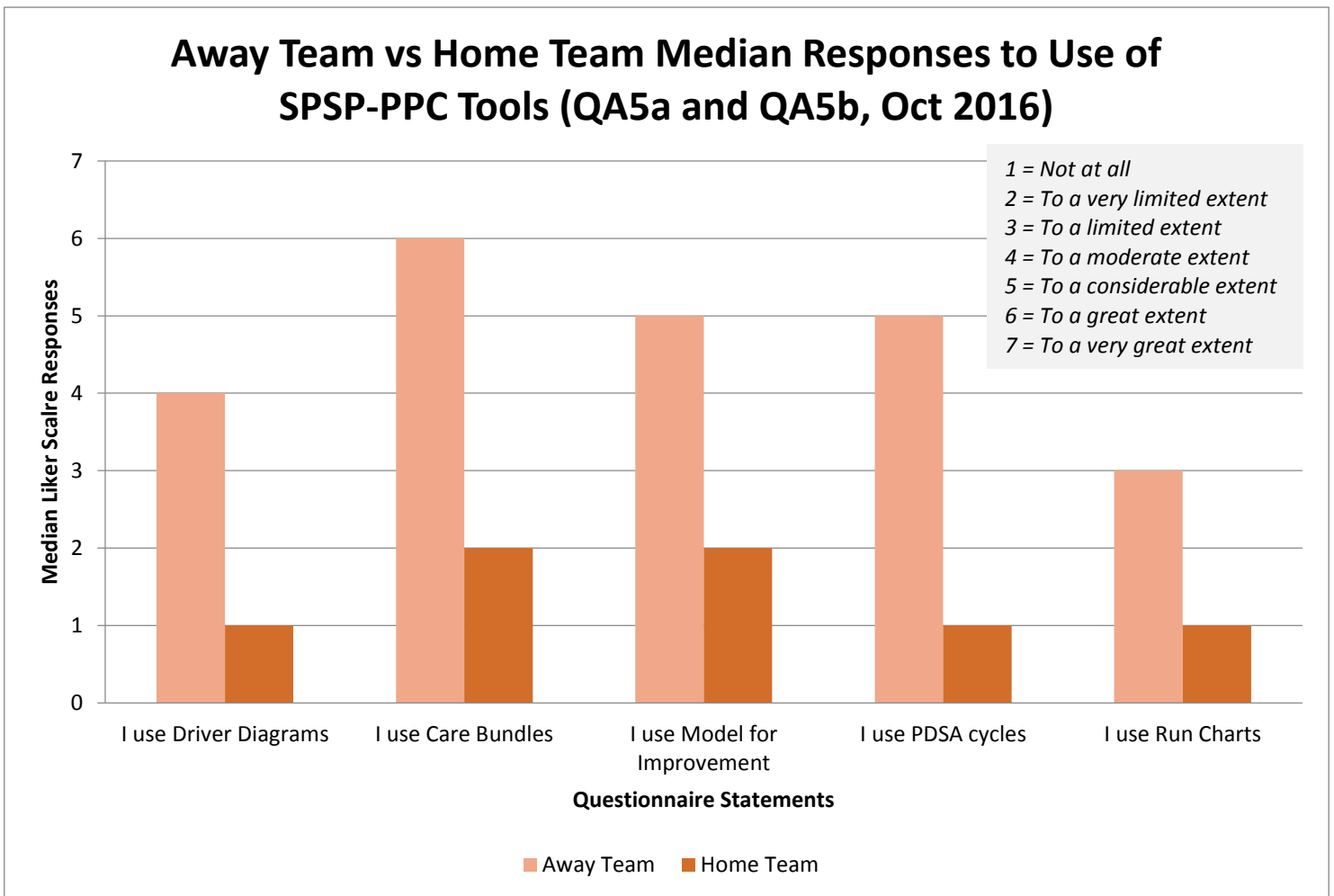


Figure 22: Away vs Home Team Response to Use of SPSP-PPC Tools

Amongst Away Team participants, median responses were highest for use of care bundles, with Run Charts eliciting the lowest level of use. Interestingly, all elements elicited a far lower rate from Home Team participants, with Run Charts and Driver Diagram use showing the lowest level of agreement (i.e. Slightly Disagree and Neutral respectively). In fact none of the tools or elements elicited “positive” statements from Home Team members. This indicates that the learning provided to Away Team members increased knowledge and awareness of programme elements and tools, however this learning was perhaps not disseminated to Home Team members and as a result did not influence any change in working behaviour of Home Team staff and/or how they would describe any change in the context of the QI approach and tools.

There was a consensus amongst HRM Focus Group participants that it was generally the Pharmacist who was responsible for implementing the SPSP-PPC Program, primarily due to the Pharmacist being one of the two who attended the National Learning events. Some pharmacists seemed reluctant to involve other staff; there was a belief that other staff members (for example technicians and support workers) would not be equipped or confident enough to provide the intervention:

*“P1: but also there’s different patients. .... with this are they on a PPI or is it because they’re getting side effects or is it because they’re on triple whammy so there was different conversations...”*

*P3: you know probably the staff aren’t as confident in that so they’re thinking*

*P1: ‘cause they wouldn’t all know what an ace inhibitor is*

*P4: or they’ll know a few of the non-steroidals but maybe not all of them*

*P1: exactly”*

*(P1: Pharmacy Manager, P3: Pharmacist, P4: Pharmacist, Health Board 2)*

In these situations some staff groups were therefore only involved (if at all) in the early stages of the process, when alerting the pharmacist that an eligible patient has presented a prescription in the pharmacy. Some participants considered the programme and delivering the intervention was akin to aspects of the role of the pharmacist. Therefore, delivering the programme was seen by many as just part of the job as a pharmacist and not the wider team. This may support the reason as to why pharmacists tended to be the one driving the delivery of the programme.

This lack of wider site staff involvement in the collaborative resonated in the Community Pharmacy HRM Case Study interviews (June - November 2015). Comments were made by a number of participants around “more experienced staff”, or a lack thereof, explaining their reasons behind only having the SPSP-PPC Away Team members actively involved in delivering HRM Care Bundles. Some staff reported having a low-level awareness of their pharmacy’s participation:

*“They’re aware but they’re not really involved. Up until the summer I had a Pre-Reg so she did a lot of the assessments which was great for her and for me...Yeah the staff are aware of it and they know what the sticker means but they don’t do the assessments.”*

*(Branch Manager, Health Board 1)*

In total 12 Home Team participants from a total of 31 Away and Home Team members involved in the case studies stated that they were not involved in the SPSP-PPC collaborative when asked, despite their pharmacy being involved.

**Conclusions: The data shows that although Away Team members reported a level of agreement to statements relating to the use of the SPSP-PPC tools, use reported by Home Team members was far lower, mimicking the lower levels of understanding also. This suggests that wider team involvement with the SPSP-PPC was not happening within sites and is corroborated by Community Pharmacy Case Study and HRM Focus Group data.**

#### **Level 4: Results**

*Results: The degree to which targeted outcomes occur as a result of the training and the support and accountability package.*

Due to the evaluation period being limited to the SPSP-PPC project timeline, it has not been possible to ascertain whether the target outcomes were realised as a result of the training. Any outcomes captured are reported under the appropriate activity: HRM Care Bundles (Evaluation Question 2); Medicines Reconciliation (Evaluation Question 3); and Safety Culture (Evaluation Question 4)

## **ii. ORGANISATIONAL & CONTEXT FACTORS**

### **Data Used in Analysis**

- Select data from QA1, QA2, QA3, QA4 and QA5a
- HRM Community Pharmacy Case Studies
- Local Learning Event (LLE) Focus Groups
- Paired Health Board Leads Interviews

During the early Health Board Leads interviews (February 2015), perceived challenges and success factors were discussed. The time involved for the Health Board Leads was raised as an issue by two of the four Board teams – predominantly due to the distances between sites in these health boards. In addition, issues raised included the ability to deliver the SPSP QI approach within the community pharmacy setting and also the engagement of General Practices in the programme. On being asked generally what factors may influence success, teams felt that engagement with the site staff would underpin the success of the programme – through building relationships with the site staff, encouraging enthusiasm from the site manager and that the staff’s hard work be recognised through appropriate remuneration.

More quantitative evaluation of success factors was measured through QA4 (NLE2, November 2015) and QA5a (CE, October 2016) which examined four factors thought to predict success within a QI collaborative: expert lead support; team work; collaborative process; and organisational support. All 33 Away Team participants at NLE1 completed the questionnaire and 26 Away Team participants at

NLE2, comprising 41 unique individuals, 20 of whom completed both questionnaires. The summary result are presented in Figures 23-26 below.

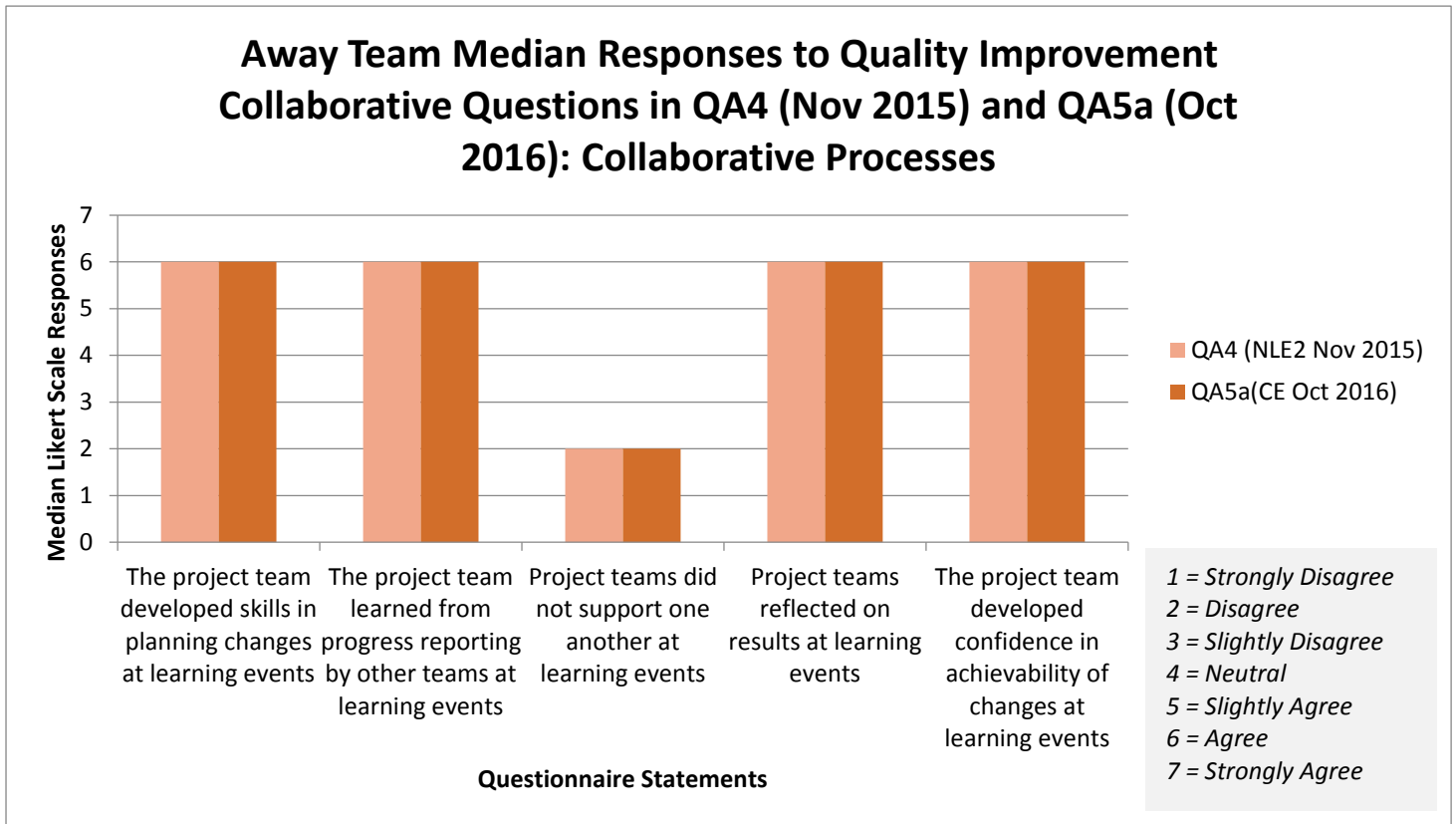


Figure 23: Away Team Response to QI Collaborative Processes

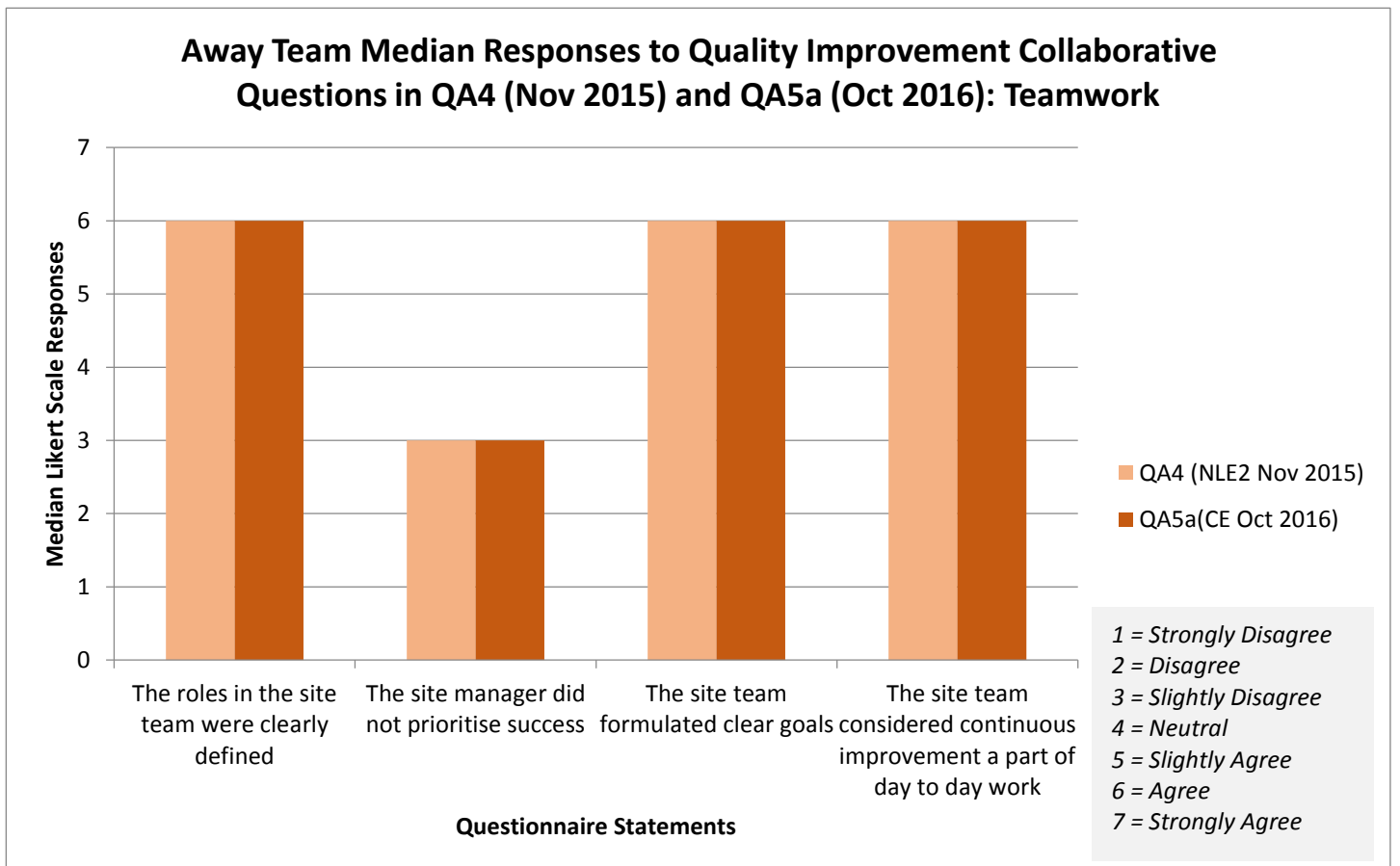


Figure 24: Away Team Response to Teamwork

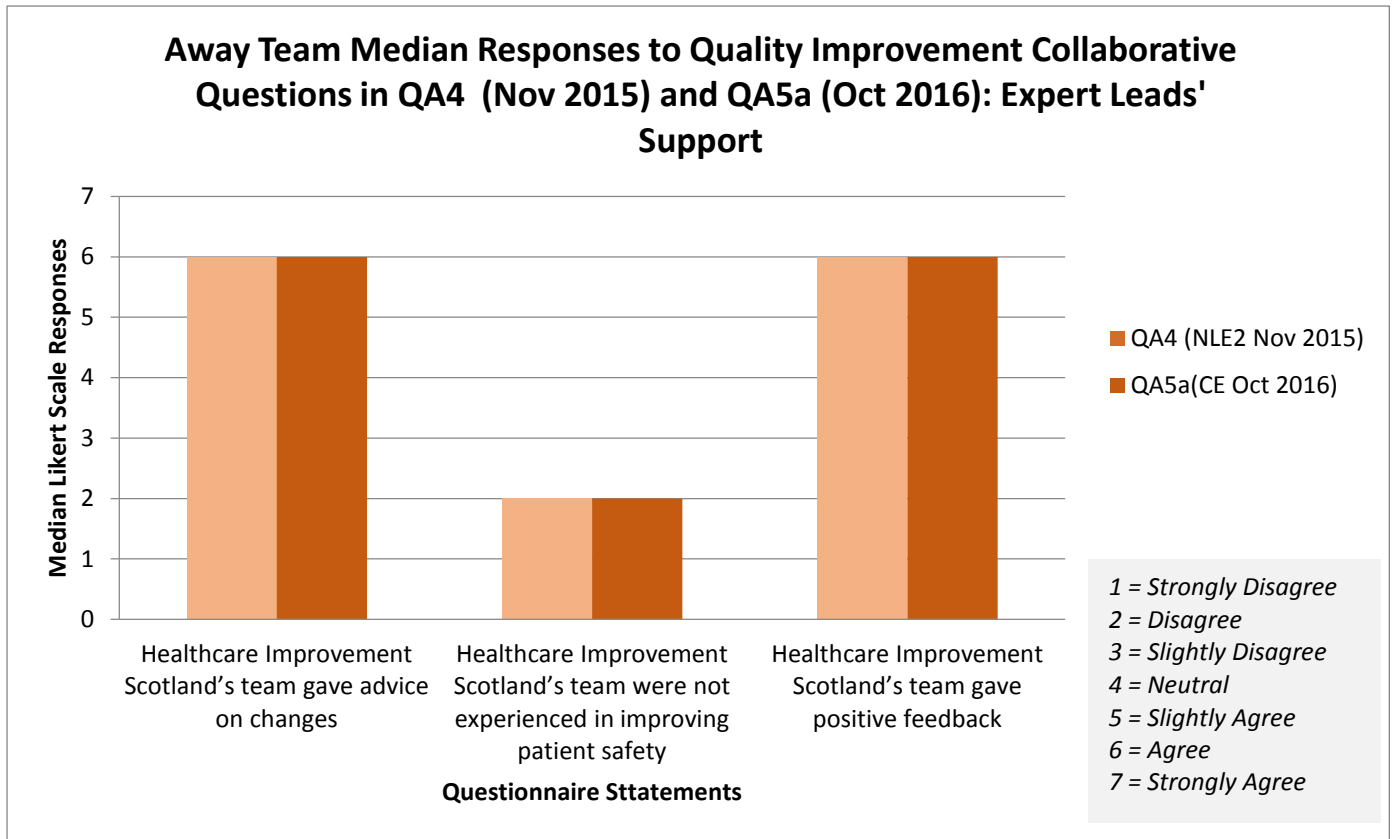


Figure 25: Away Team Response to Expert Lead's Support

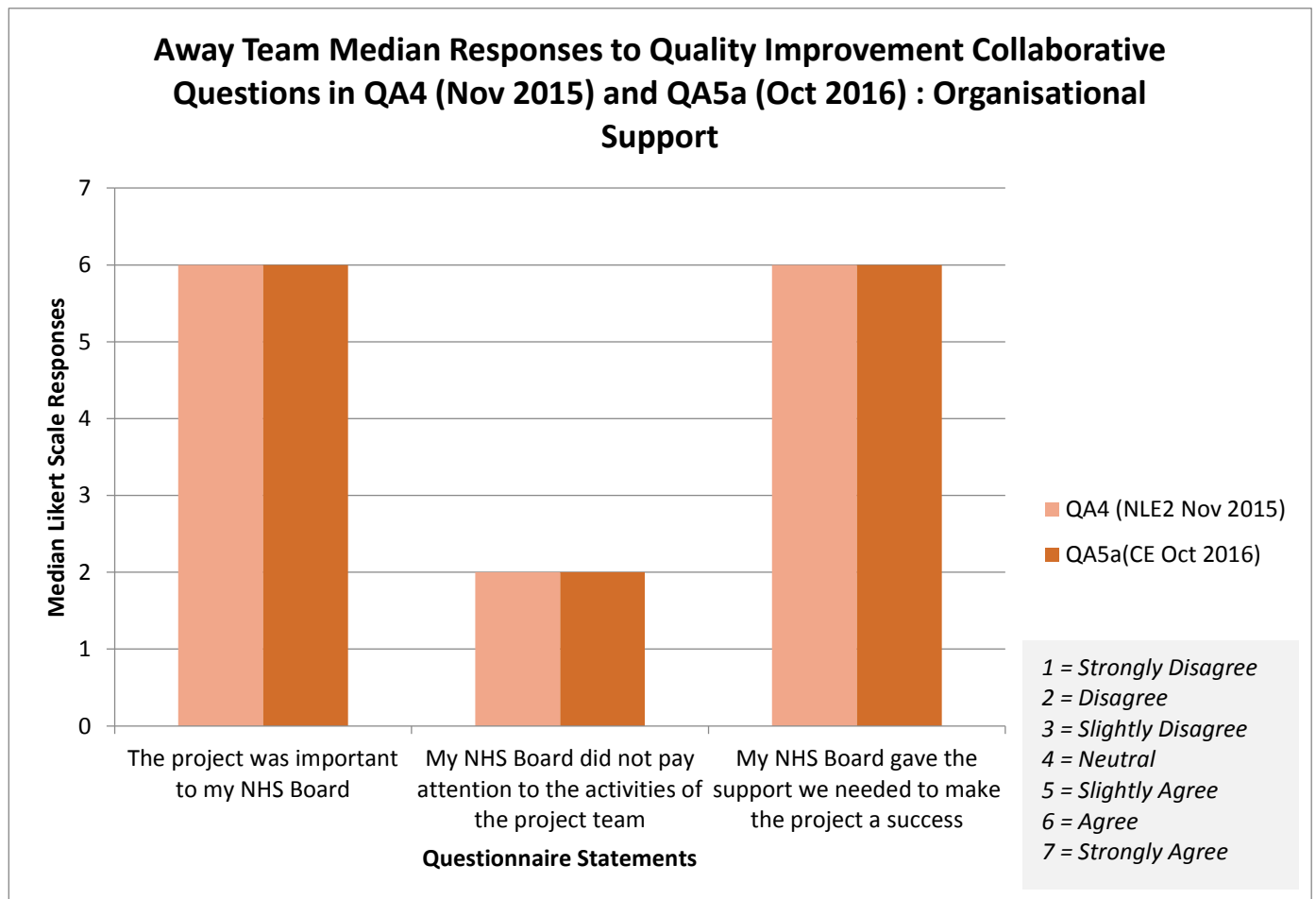


Figure 26: Away Team Response to Organisational Support

We can see that median responses tended to remain the same across all time points.

Figure 27 shows the median scores for the four factors examined in QA4 and QA5a by all 4 Health Boards. Statements that were worded negatively were reverse scored. Overall agreement was moderate – to - high and generally remained so regarding expert lead support, team work, organisational support and collaborative processes.

***Conclusions: Health Board Leads agreed that team support and engagement would be critical factors to the success of the programme. This was corroborated by the Away Teams through the quantitative evaluation which reported Collaborative Processes, Expert Lead Support and Organisation Support as positive.***

## Overall Away Team Median Responses to Quality Improvement Collaborative Questions QA4 (Nov, 2015) and QA5a (Oct 2016) , T1 vs T2 by NHS Board

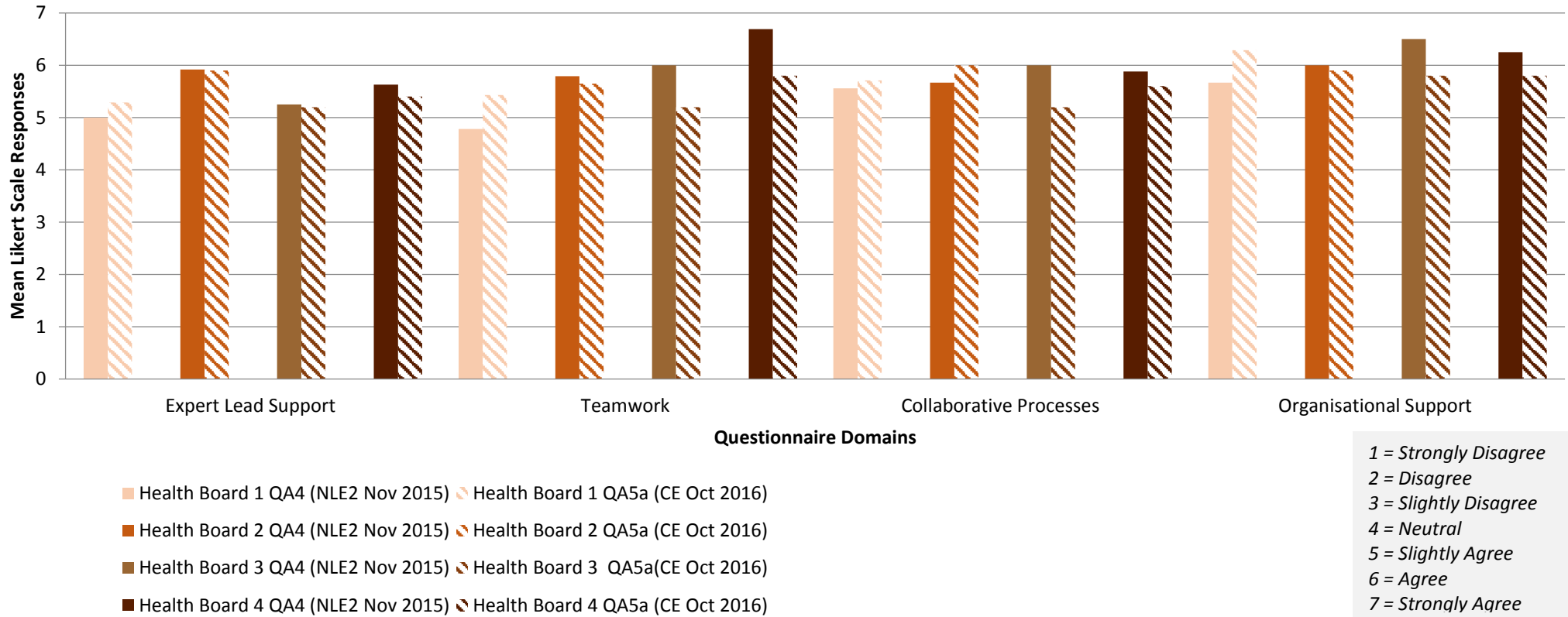


Figure 27: Overall Away Team Response to QI Collaborative Questions



## **b. EVALUATION QUESTION 2: How did the intervention programme improve the practice of high risk medicines (HRM) handling?**

This section of the results will be reported under the Framework of Proctor et al's taxonomy of Implementation outcomes. The results will examine the acceptability, adoption, perceived appropriateness, feasibility, fidelity to, penetration and sustainability of the HRM change package within the SPSP-PPC collaborative by Away and Home Teams. The implementation cost element will not be examined as this project was funded and participating sites received remuneration for their participation.

### **Implementation Outcomes**

#### **Acceptability**

*Acceptability: The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory.*

#### **Data Used in Analysis**

- Select data from Away Team responses to QA1, QA2, QA3 and QA5a
- HRM Community Pharmacy Case Studies
- HRM Focus Groups
- Celebratory Event Short Patient Impact Interviews

#### *Acceptability of HRM Element*

The HRM element of the programme is dependent on staff having an understanding of the underpinning QI tools. Figure 18 illustrates the understanding of care bundles, run charts and PDSA cycles over time for Away Team participants. Over the course of the programme, it is clear that there is an increase in understanding of these key HRM programme elements and concepts, with less progress observed between the NLE1 (Nov 2014) and CE (Oct 2016). This perhaps represents a ceiling effect which is retained and sustained throughout year 2.

The CE Short Patient Impact interviews (Oct 2016) also provided insight into how the acceptability of the HRM intervention was approaching the end of the programme. Participants were generally positive about this programme element and all reported that they were still implementing it in their sites and were seeing the change in the perception of their role, reinforcing the notion that it was accepted as important by participants and by patients:

*“Again building that relationship not just between the pharmacist but the pharmacist and the staff as well. [Staff] used to get asked question, “Can I speak to the pharmacist?” and it was something another member of staff could have dealt with like ordering a repeat, whereas now because the staff are giving out that information in the care bundle...it means the customers and the patients are much more likely to ask them questions...I think it’s made it look like a pharmacy team rather than the pharmacist being the only person that knows about medicines.”*

*(Pharmacist, Health Board 4)*

The QA5a questionnaire (Oct 2016) identified a high level of agreement with the statements: HRM was important within community pharmacy/dispensing practice; HRM element of the SPSP-PPC collaborative aligned to participants’ views of Community Pharmacy/dispensing practice; and aligned with the overall vision of Pharmaceutical Care (Prescription for Excellence).

During the HRM Focus Groups (LLE1, Apr-May2015), participants were asked about the implementation of the HRM care bundles thus far. Participants provided details of how they were implementing the element and who was primarily involved. Participants discussed the process by which they identified eligible patients, which spanned a number of methods. Most were provided the intervention opportunistically as they entered the practice, and staff were alerted that they were potentially eligible for the intervention based on the prescription they presented. Most participants said that at some point in the process of identifying and recruiting patients, they checked patients’ names off of a list derived from their own patient records, yet a list of patients generated and provided by the SPSP-PPC leads was also discussed. However, the list supplied to the pharmacies by the project was deemed to be out-of-date and was not a fully comprehensive list of all patients who may be eligible for the intervention, and was thus not accepted by staff:

*“P1: Half the patients hadn’t been to our pharmacy for six months or-*

*P3: they’d come with it once*

*P1: Yes*

*P3: and they lived elsewhere*

*P2: It’s a little bit out of date as well when I looked at it I think*

*P1: I think they recognised that though after they sent the list out that it was maybe not be the best idea.”*

*(P1: Pharmacy Manager, P2: Pharmacy Manager, P3: Pharmacist, Health Board 2)*

Some patients were proactively contacted to participate in the intervention. These participants tended to be house-bound, or had a patient representative normally attend the pharmacy for them, and were contacted via telephone. This recruitment method was accepted well by staff who saw it appropriate for this hard-to-reach patient cohort:

*“P3: The hardest ones are like the deliveries, the people who never come into the pharmacy...the only interaction they have is probably with the delivery driver...the delivery driver, he’s on board so he’s kinda telling them a bit about what we’re doing and then asking if they can phone into the*

*pharmacy...that's worked quite well."*  
(Pharmacist, Health Board 1)

Beyond identifying patients from the (inaccurate) list, the most prominent issue was in simply identifying enough patients to submit data for every month. Some participants felt that the criteria were so specific that it made it very difficult to identify enough patients to interact with:

*"P2: It's quite a complicated...the patient cohort, you've got to run through, is it a triple whammy medication? Are they getting non-steroidal anti-inflammatory? How old are they? And you've got to run through this before you can identify whether or not they fall into the specific cohort. I think with [another health board], they're doing a warfarin and non-steroidal which is easy to flag up. So one complaint I've got for [this health board] is it's more complicated than it really needs to be to be honest...when you look at the paperwork you've been emailed out about how to identify the patient, what the patient cohort is, it's like flaming flow diagram...and it's hard, you can't really ask staff to do it because they're not sure."*

(Pharmacy Manager, Health Board 2)

### *Acceptability of HRM Resources*

HRM Focus Group participants explained that beyond the basic requirements of implementing the HRM Care Bundles, they used a number of resources, namely stickers which were to be applied to the relevant patients' prescriptions / prescription bags to highlight them as part of the cohort:

*"P1: The girls on the counter when they see the sticker they know that they need to ask but it's just about getting that sticker on the prescription. So the new stickers came out and I've placed them right beside each of the computers...they really can't miss them 'cause they're really big."*

(Pharmacy Manager, Health Board 1)

The use of stickers was well-accepted however the posters that had been provided to them by management were not as they felt that they had no room within their pharmacy to display them.

Participation in the programme was also challenging beliefs around what the role of the Pharmacist was for other staff (see Evaluation Question 1: Level 3 Behaviour). Participants also explained their interactions with nurses and nursing home staff in relation to their involvement in the programme. The overall response was that staff relationships with nursing staff were supported by the SPSP-PPC collaborative, as some of the sites involved serviced care homes. Furthermore, where patients could not attend the practice in person (i.e. care home residents), staff had delivered the interventions to care home staff as it was they who would be responsible for patients' medicines:

*"P3: Yeah cause you know [the pharmacist] went round the two care homes and he took the bundle questionnaires and basically went through them with the Head*

*Nurses at both care homes and they basically answered them for each patient so yeah technically that is just ticking them off...*

*P2: Yeah I would say that's done for them though because if it was somewhere in a house and it was the wife for example a wife looking after a husband and the husband wasn't capable to go through the questions you would go through it with the wife and you would tick them off because it's done for that person. I think whoever's in primary care of their medicine."*

*(P3: Pharmacist, P2: Trainee Technician, Health Board 1)*

The acceptability of the element can also be seen in more tangible detail through the HRM community pharmacy case studies (June – Nov 2015). One participant did express that the appropriateness of the care bundle did hinge on factors such as the length of the intervention and how acceptable that would be to the patient, and that this could depend on the individual patient:

*"Actually [the] consultation itself can be quite lightweight but in some cases can actually be quite lengthy...so, it's trying to find a balance between what works and what's gonna be beneficial."*

*(2nd Pharmacist, Health Board 1)*

***Conclusions: At the beginning of the SPSP-PPC collaborative, staff acceptability of the HRM intervention was lower due to a lack of understanding. However, progressing through the programme staff understanding and acceptance of the HRM care bundle was developed and maintained in part through local contextualised solutions to implementation.***

## Adoption

*Adoption: The intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as "uptake."*

### Data Used in Analysis

- Select data from QA1-QA3 and QA5a & b
- HRM Community Pharmacy Case Studies
- HRM Focus Groups
- CE Short Patient Impact Interviews

In theory, a number of factors could inhibit adoption of the intervention, therefore it was pertinent to examine to what extent (and what aspects of) the implementation were adopted by participants, how, and why.

In QA5a and QA5b (CE, Oct 2016) a number of items specifically focused on action i.e. where participating sites completing the activities and using and adopting the tools and practices. Figures X (Evaluation Question 1: Level 3 Behaviour) illustrates the Away and Home Team responses to statements on the use of care bundles, Run Charts and PDSA cycles. The results were more positive for Away team than Home Team participants. There was a higher median level of agreement that care bundles were being used by the Away Team. This would seem reasonable as the care bundle Implementation was one of the more established elements of the programme. Use of Run charts was less frequent for both teams than any other tool. Earlier in QA2 (LLE1, March-April 2015), participants were asked to detail if they had completed at least 1 PDSA cycle at that point in the programme. Of the 47 Away Team respondents, 30 said they had completed at least 1 PDSA cycle (10 reported “No” and 7 were either unsure or did not respond) which potentially affirms an issue with potentially integrating these tools into routine practice.

When responding to the statement “We are doing all we can with HRM” in QA5a & b (CE, Oct 2016) the levels of agreement between Away Team and Home Teams were similar (median = 5 and median = 4.5 respectively. Away Team median responses over time are displayed in Figure 28:

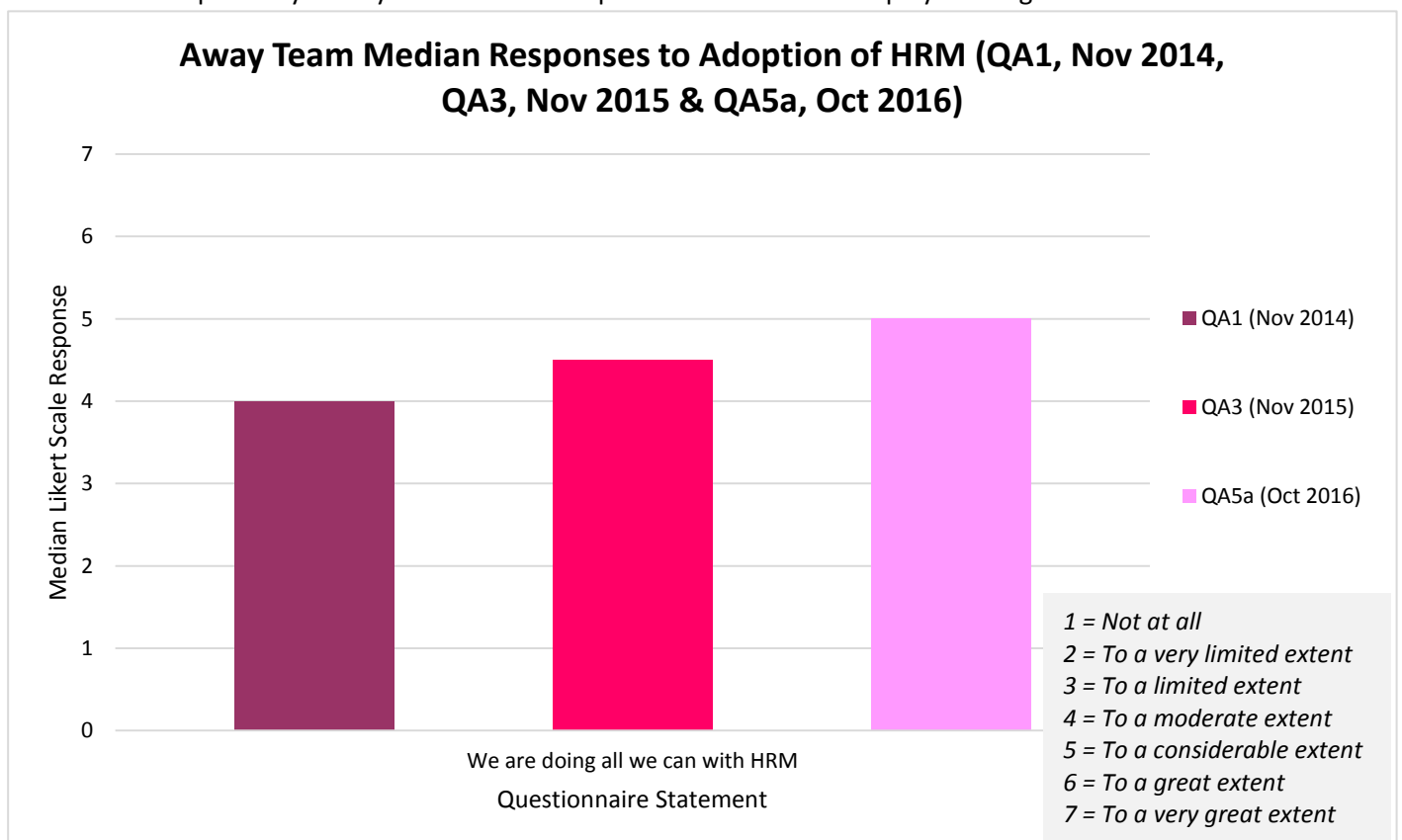


Figure 28: Away Team Response to Adoption of HRM

**Conclusions: Sites had adopted Care Bundles with confidence, and PDSA cycles and Run Charts to a lesser degree as part of the HRM element of SPSP-PPC collaborative.**

## Appropriateness

*Appropriateness: The perceived fit, relevance, or compatibility of the innovation or evidence based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem.*

### Data Used in Analysis

- Select data from Away Team responses to QA2
- HRM Community Pharmacy Case Studies (Home and Away)
- HRM focus group data (Home and Away)

From QA2 (LLE, Mar-Apr 2015) we see that participants had a median score of “To a Great Extent”, in response to the statement “I think that the tools we are using will improve patients’ safe use of the high risk medicine”. This shows a good level of agreement that participants felt the tools were fit for purpose and appropriate.

During the HRM Focus Groups (April-May2015), participants discussed the process by which they identified eligible patients. Some participants expressed that the list of patients eligible for the NSAIDs intervention, supplied to the pharmacies by the Health Board Leads, was deemed to be out-of-date and was not a fully comprehensive and was thus disregarded (see HRM: Acceptability).

Some HRM Focus Group participants mentioned that the SPSP-PPC collaborative had reinforced the image of the pharmacist as being someone who does more than just dispense medicines. Engaging with patients about their medicines challenged them to consider the pharmacist role as more evolved:

*“P3: I think it’s still they think, that’s the prescription written, that’s my medicines, just give me it and go or what*

*P2: yeah your role’s not to talk about it, it’s just stick it in a bag and give it out to me...*

*P1: your job is to produce a label and stick it on and sign it [laughs].”*

*(P3: Pharmacist, P2: Pharmacy Manager, P1: Pharmacy Manager, Health Board 1)*

One participant did feel that taking part in the programme aligned well with how community pharmacy is changing over the course of the next few years, mainly due to the *Prescription for Excellence* Action Plan. Having a more active role in patient medicines seemed natural in this context.

Several of the participants detailed that their pharmacy delivered a multitude of other high-risk or disease-specific interventions for patients that were not dissimilar to that of the SPSP-PPC including the Chronic Medication Service (CMS) and Gluten Intolerance Service. It was suggested that the current warfarin and NSAIDs Care Bundles could be delivered as part of other services:

*“P2: You could probably quite easily implement it into part of the patient care records ‘cause they’ve done that with the new service that’s nationwide, it’s the gluten-free service, so that’s now got its own bit on the patient care records that you can fill in when you’re having a consultation, so yeah they could add that on quite easily I suppose...”*

*P1: you’re almost duplicating work then aren’t you because we’re filling out the form to send in to [the Lead], and then you’re doing it on the PCR*

*P4: ‘Cause we-we’ve got so many people that want us to do things...you’ve got lots of different people wanting different things but if you can slot them in to all of them then you can kill two birds with one stone. But I suppose there’s then there’s overlap in what all the people are asking you to do.”*

*(P1: Pharmacy Manager, P4: 2<sup>nd</sup> pharmacist, Health Board 2)*

As the quote suggests integration within other national services which would minimise the amount of reporting or logging of patient details could be helpful moving forward. Although the HRM element fits well with the ethos of community pharmacy, there was perhaps discord relating to the suitability relating to the staff on-site who could potentially deliver the intervention, versus those who were actually involved (see Evaluation Question 1: Level 3 Behaviour section).

At the Celebratory Event (QA5a, 2016), Away Team members were asked to score their agreement on the appropriateness of the HRM element in relation to a number of different statements (Figure 29). Strong agreement was observed across the range of statements covering health policy, working practices and patient care.

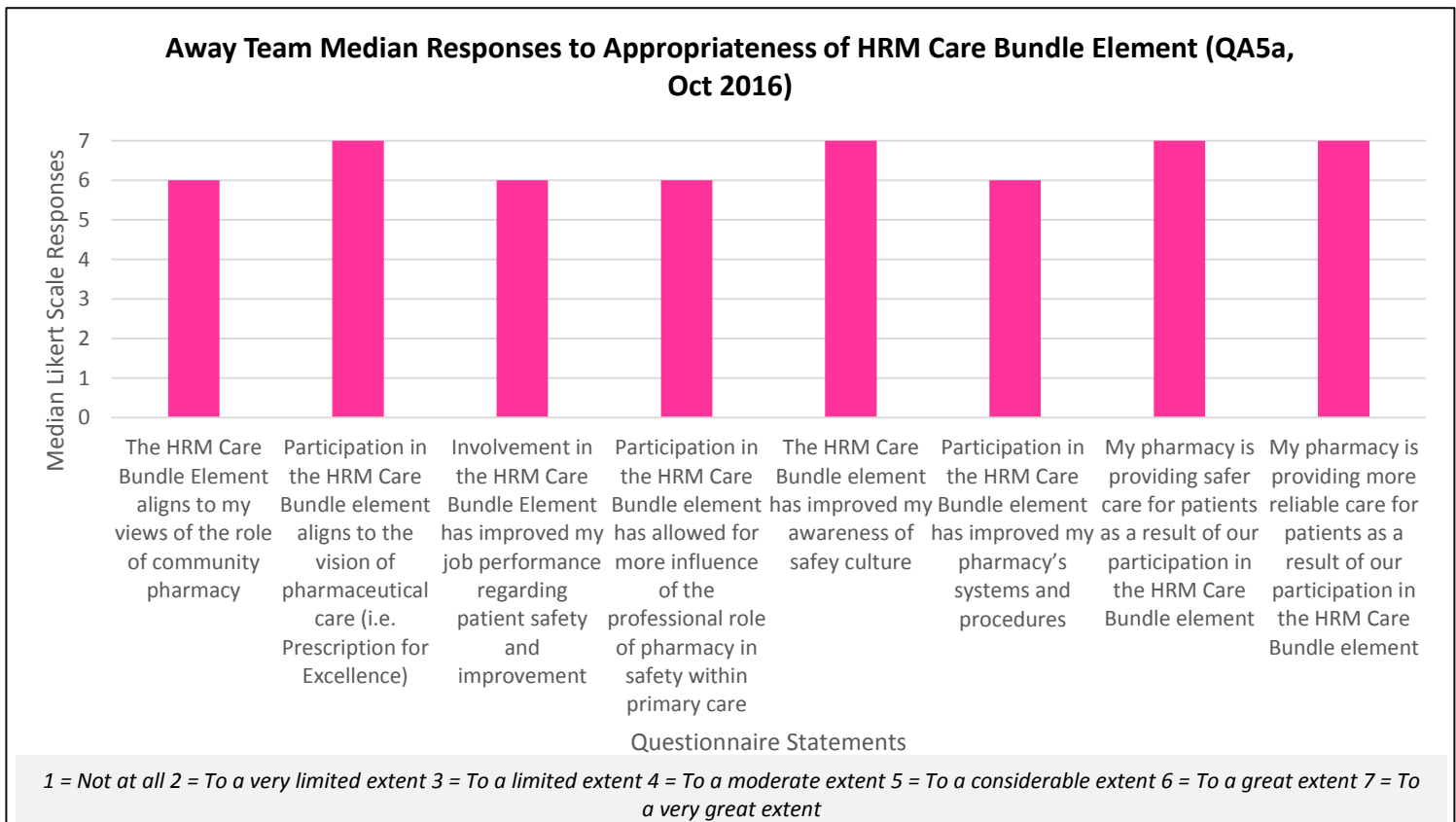


Figure 29: Away Team Response to Appropriateness of HRM

**Conclusions: The HRM element of the programme was seen as appropriate in the context of the role of the practice sites, especially community pharmacy, and the provision of safe and reliable patient care. Better alignment with other national services was proposed in moving forward.**

## Feasibility

*Feasibility: The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting*

### Data Used in Analysis

- Select Away Team data from QA2 & QA5a
- HRM Community Pharmacy Case Studies
- CE Short Patient Impact Interviews
- Additional Supplementary Data from CE

Participants were asked about the time and resource participating in the programme consumed through the variety of questionnaires over the evaluation period. Figure 30 shows the change in opinion from NLE1 (QA1, Nov 2014) to NLE2 (QA3, Nov 15) for statements relating to data collection and the pressure of attending SPSP-PPC meetings:

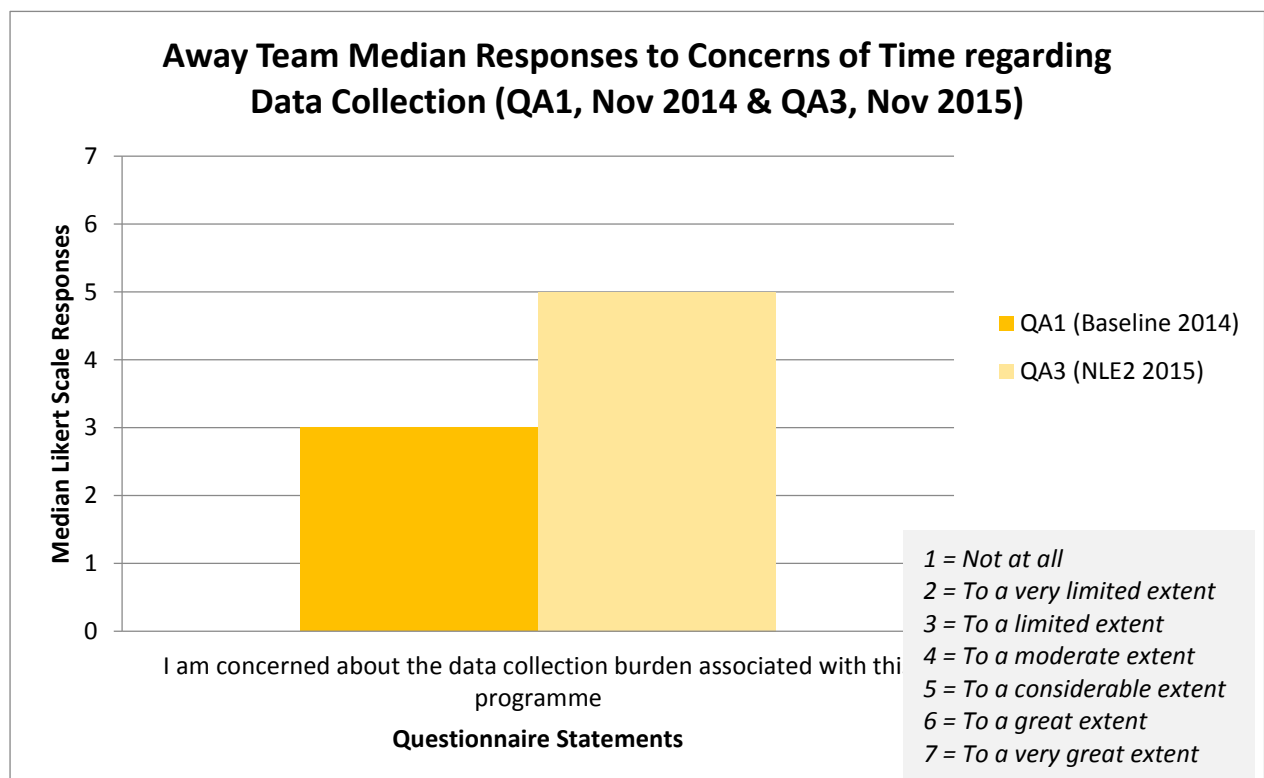


Figure 30: Away Team Response to Concerns of Time



Participants were not concerned about the burden of data collection at baseline, however scores did increase 1 year later to a median of Slightly Agree, perhaps due to having more experience of data collection. This was also reported in the HRM Community Pharmacy Case Studies (June-November 2015) with one participant indicating that the HRM Care Bundle format and associated data reporting documents were not useful:

*“I found the most difficult part was reading the paperwork. I had to actually write it out myself to understand what we were trying to audit...It wasn’t going in to me, so I had to put it down differently, and it made it easier for my student to do his audit.”*

*(Second Pharmacist, Health Board 2)*

Other staff reported their own solutions in developing localised data recording tools to aid the process. Many case study participants also reflected that time pressures challenged the feasibility of participating in the HRM change package. These included time pressures of general pharmacy work, of patient consultations (which vary), of data reporting, and of other services being provided:

*“It just like it seems like there’s so many different local enhanced services going on that it’s really hard to keep up ...it seems like it is a good idea if these things are causing problems but it’s just the volume of these services...plus having to do everything else as well, it seems really difficult. Quite daunting in some ways.”*

*(Pre-Registration Pharmacist, Health Board 2)*

Furthermore, some participants reported it was not deemed feasible for all pharmacy staff to fully participate in the HRM Care Bundle; as mentioned previously, the responsibility tended to realistically fall on the Pharmacist

*“At the moment because we’re short-staffed, we’ve got one of our more experienced members off long-term sick so things have kinda been a bit hairy...so [the other staff] are aware that we’re doing [the programme] but they’re not as involved as I would have hoped for or they were previously.”*

*(Pharmacist and Branch Manager, Health Board 3)*

However, these challenges were alleviated somewhat within some pharmacies who took a pragmatic approach:

*“If we can do it, we will do it. If we can’t do it, we can’t do it and we’ll catch them in the next time. So, we won’t let any, any other customer suffer because we’re speaking to one person...So, it’s not been disruptive because we’ve always picked up time where we can give them our time.”*

*(Pharmacist and Branch Manager, Health Board 1)*

Participants also commented on challenges around the feasibility of accessing the patient cohort, as participants tended to see a lot of the same patients repeatedly for some aspects of the care bundles (see HRM: Acceptability section). Additionally, there was an issue around “hard-to-reach patients”, whereby carers or patient representatives collected their prescriptions from the pharmacies:

*“So, we just have to phone them if we can get, you know, if we are able to talk to them on the phone, which is quite difficult...[and] if it’s somebody else that comes in for them you know...[it] happens quite a lot.”*

*(Accredited Checking Technician, Health Board 1)*

Away Team participants reported that participation in the HRM programme element was not too onerous, Case Study Pharmacy participants did report that the element was more involved than anticipated, although these comments again focused more around the data collection and reporting as opposed to delivery of the care bundle. It was deemed that entering and reporting data can be disruptive to the natural flow of work, whereas counselling patients was seen as part of the role of community pharmacy already.

However, 1 year post-HRM Case Studies, Away Team members at the Celebratory Event (QA5a, Oct 2016) were asked about the sufficiency of time and resource in delivering the HRM intervention and agreed overall that they had sufficient time and resource to a great extent (Figure 31):

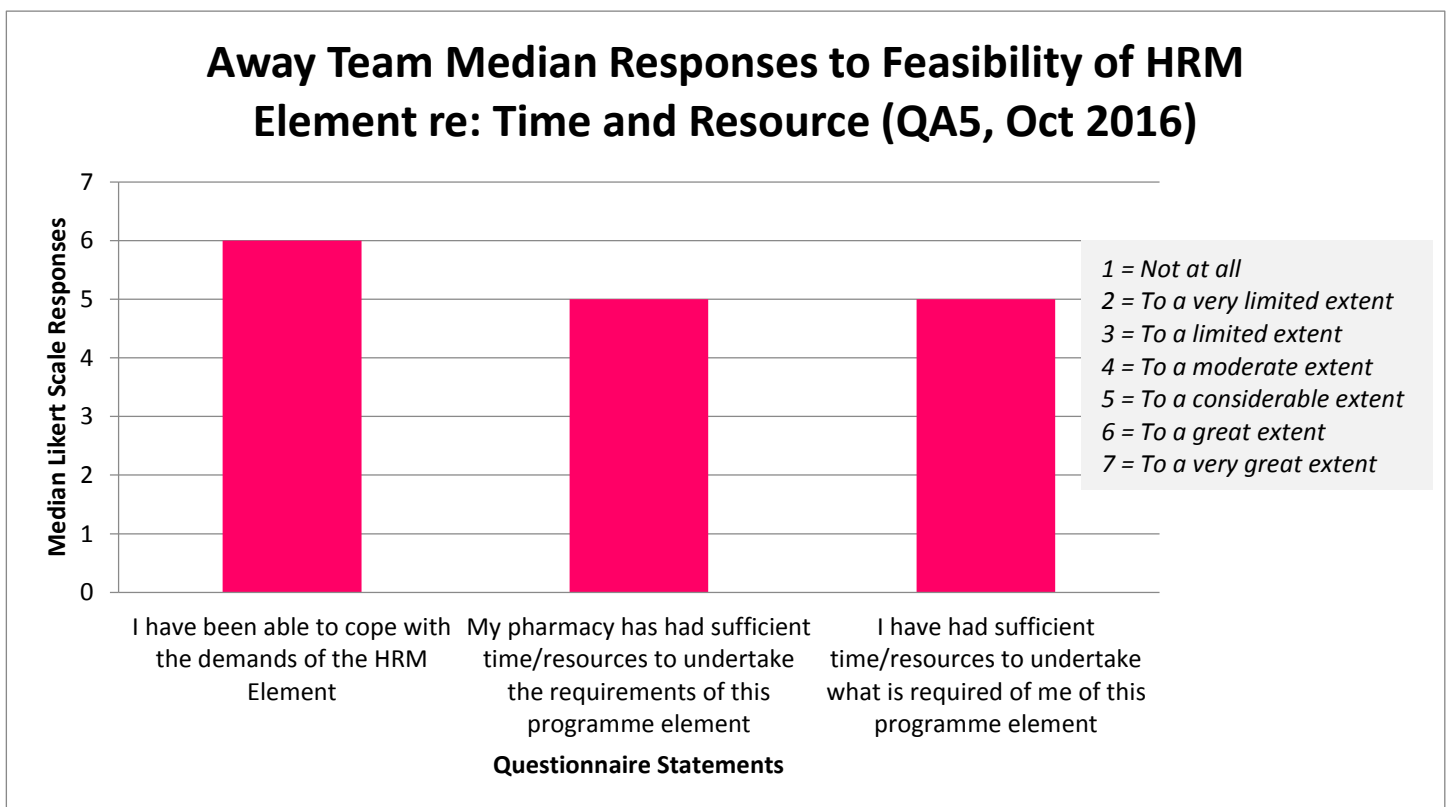


Figure 31: Away Team Response to Feasibility of HRM

In the Celebratory Event Short Patient Impact Interviews, one participant commented that although they had stopped collecting and reporting data back to their health board, delivering the HRM Care Bundles was feasible due to it fitting in well with current community pharmacy practice:

*“I think it’s now just second nature for the staff...it doesn’t take long, just a quick conversation...you do still find the odd patient that’s like ‘oh I’m not bothered by that, I*

*don't really take [my NSAIDs] after food and that's when then it highlights that actually we do need to have this conversation"*  
*(Job role unknown, Health Board 2)*

**Conclusions: Although participation in the SPSP-PPC collaborative at this pilot phase could be moderately onerous for some, delivering the HRM care bundles was seen as feasible for participants.**

## Fidelity

*Fidelity: The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers.*

### Data Used in Analysis

- Select data from QA1
- HRM Focus Groups
- HRM Community Pharmacy Case Studies

From previous data presented Away Team participants had a good understanding of the HRM elements (care bundles, PDSA cycles and run charts), and this level of understanding was maintained over the course of the programme, although less so for the Home Team. During the HRM Focus Groups, participants were asked how they were identifying eligible patients. The methods for patient identification was found to be variable (see Adoption and Fidelity sections) with sites often solving for this locally, particularly for the NSAID Care Bundle. Furthermore, participants had issues around the strict patient cohort criteria (especially for NSAIDs) and were therefore targeting patients who tended to either be outside of the recommended age bracket for intervention, or were not on a triple whammy but as per the pharmacist's judgement still required an intervention. Most participants did seem to adhere to using some of the additional tools to aid the implementation of the HRM Care Bundle, including the stickers for prescription bags:

*"P1: The girls on the counter when they see the sticker they know that they need to ask but it's just about getting that sticker on the prescription. So the new stickers came out and I've placed them right beside each of the computers...they really can't miss them 'cause they're really big."*

*(Pharmacy Manager, Health Board 1)*

The HRM Community Pharmacy case studies (April - November 2015) highlighted that there was variable engagement of the Home Teams in delivery of the care bundles; the intention had been to achieve broad Home Team participation in programme delivery to support sustainability. However, in reality the responsibility of participating in the programme was often held by the pharmacist and sometimes the other Away Team members, and often other staff members were not actively encouraged to be involved:

*“I think at the moment because it is just myself taking on the whole process, if I’m not there cause I’ve had a day off...the data’s not getting collected...They’re maybe not following up...ideally we’d have it so that staff would be able to help with any kind of-like they could fill in if I wasn’t there, so that’s kind of that’s the main thing just now.”*  
 (Branch Manager, Health Board 3)

**Conclusions: The practicalities of patient identification was found to be challenging, particularly for the NSAID Care Bundle. Once identified the care bundle was seen as the responsibility of the pharmacist and not involving the wider pharmacy team in a number of practice sites. Sites utilised some of the central resources but also developed local tools to support integration into established systems and procedures.**

## Penetration

*Penetration: The integration of a practice within a service setting and its subsystems.*

### Data Used in Analysis

- Select data from QA2, QA5a & b
- HRM Community Pharmacy Case Studies
- HRM Focus Groups
- CE Short Patient Impact Interviews

In QA2 (LLE1, March – April 2015) participants were asked if their wider pharmacy team was involved in the HRM Care Bundle (Figure 32).

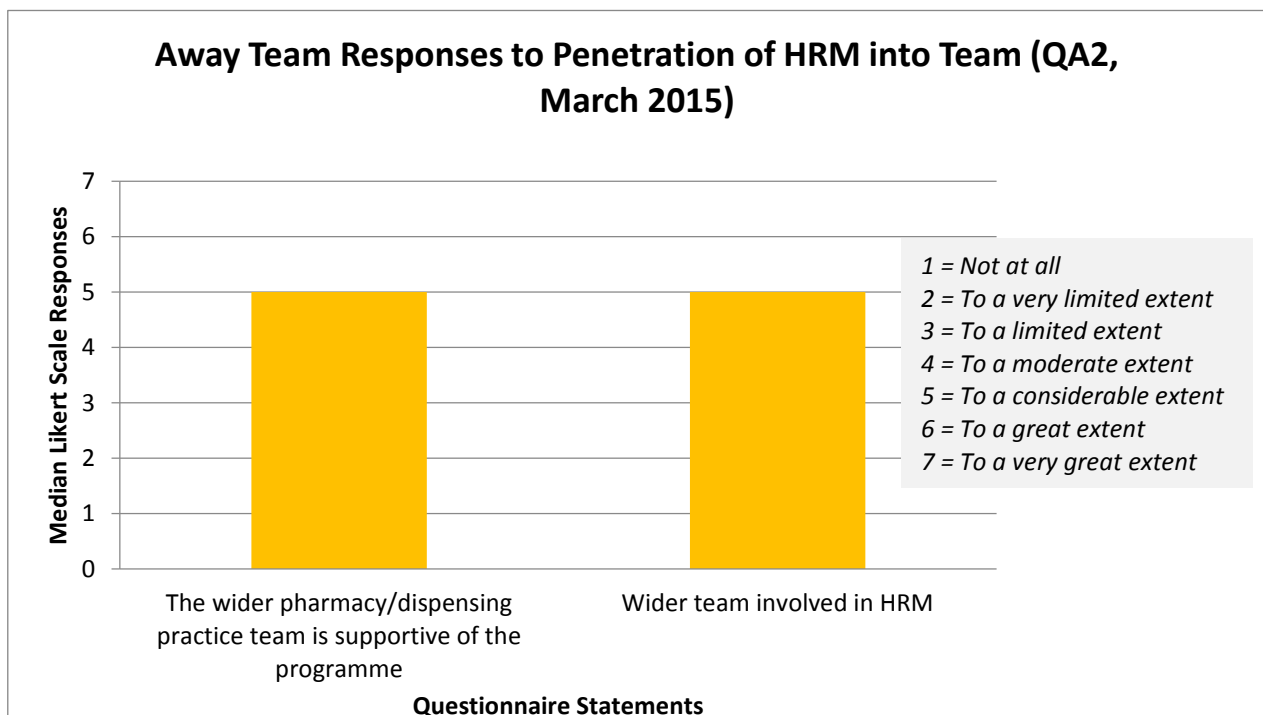


Figure 32: Away Team Response to Penetration of HRM

Participants felt that the wider pharmacy team was both involved in and supportive of their participation in the HRM element to a considerable extent (median = 5). When asked in QA5a (CE, Oct 2016) if they would like to continue with the HRM element of the programme, the Away Team elicited a median response of 7 (“Strongly Agree”) that the process had penetrated into their working practices and were favourable to continuing their involvement.

As discussed previously in the Fidelity analysis, it was reported that some Away Team members were assuming responsibility for the delivery of the HRM change package providing a clear measure of a lack of penetration across the practice team. However, this was not always the case with some examples of wider team involvement being described through the CE short interviews:

*“Again building that relationship not just between the pharmacist but the pharmacist and the staff as well. They used to get asked question, “can I speak to the pharmacist?” and it was something another member of staff could have dealt with...whereas now because the staff are giving out that information in the care bundle about warfarin...it means the customers and the patients are much more likely to ask them questions as well and not always the pharmacist. So I think it’s made it look like a pharmacy team rather than the pharmacist being the only person that knows about medicines.”*

*(Pharmacist, Health Board 4)*

Furthermore, examples were given where the multidisciplinary team were being involved in the HRM Care Bundle element, therefore helping to provide a more holistic and effective pharmaceutical care experience for these high-risk patients:

*“I didn’t fully understand the INR clinic and you know what they did there...So I went to the nurses at our local hospital and asked if I could sit in one of the clinics and they were very, very happy to let me do that, and to show me you know their processes and I shared you know what we did and what we were hoping to do whilst doing the warfarin work, and it highlighted a lot of things. You know I explained to them that we really needed these certain pages in the book filling in and sometimes they were missing and how best did they want me to help and its really simple but I just highlighted the bits in the book so that next time when the patient went in to the INR clinic the nurse would open it up and “oh right we didn’t fill that bit in” and it would get filled in.”*

*(Registered Technician, Health Board 3)*

***Conclusions: Penetration of awareness and understanding of the HRM care bundle was variable, much stronger for Away Team participants, and this impacted on whom in the practice team was delivering the care bundle to patients. However, some Away Team participants could provide examples where the Home Team were involved in the delivery of the HRM bundles, and also involvement of the wider MPT.***

## Sustainability

*Sustainability: The extent to which a newly implemented treatment is maintained or institutionalized within a service setting's ongoing, stable operations.*

### Data Used in Analysis

- Select data from QA5a
- HRM Focus Groups
- CE Short Patient Impact Interviews

During the HRM focus groups, participants mentioned a number of barriers which were limiting their participation; in the main these were time and information technology (IT) issues. Although delivering the care bundle itself was seen as “business as usual”, the data recording and use of PDSA cycles was seen as time-consuming (the former may not be part of sustained delivery of the HRM change package). IT was an issue again when reporting data back to Health Board Leads. Participants were also asked if they had any issues with any of the resources or materials associated with the SPSP-PPC collaborative. Comments were generally positive about the associated materials, and where there were issues, they were frequently resolved:

*“P2: I think whatever we've asked of them they've generally tried to fix and come up with different things...We reported back about stickers...the stickers we use weren't really that useful because of their colour and their size and stuff so [the leads] went away and re-designed that. We asked for posters to put up and they went away and done that and got various recording tools that they've really tried to make as easy as possible on us, tried to kind of auto input as many fields as possible and stuff so they've tried to make it as labour-free as possible I would say.”*

*(Trainee Technician, Health Board 1)*

One participant remarked on the warfarin yellow book and how, due to some patients now receiving print-outs of their levels, the books were not being kept up-to-date and patients were not bringing them in to the practice with them. This lack of use was affecting the implementation of the Warfarin Care Bundle. Developments were reported to be ongoing in regard of the yellow book completion to facilitate a more sustainable care bundle moving forward.

In QA5a (CE, Oct 2016), participants were asked if they would like to continue with the HRM Care Bundle element of the programme post-pilot stage. Clearly motivation to continue would be a contributory factor to the sustainability of any programme element beyond pilot. The median response of 7 (strongly agree) to the statement “I would like our site to continue to use the programme tools/procedure of the HRM element after the SPSP-PPC collaborative comes to an end”, indicates a high level of willingness to continue with the HRM Care Bundles.

During the CE Short Patient Impact Interviews, staff were asked about their current activity regarding the HRM Care Bundles, and as discussed previously (section x) some provided insight into how the practice had been integrated into their day-to-day work, suggesting sustainability would be possible.

Furthermore, one staff member had since left their post and had begun working in a hospital setting. Having seen the benefits of the HRM Care Bundles in the primary care setting, this staff member had endeavoured to carry on with the HRM Care Bundle as a way of sustaining the service beyond the initial intended environment:

*“I’d definitely say the bundle I’ve taken into [my new role] with me now...I can use it [there] when I’m training patients as well so I definitely think it’s raised my awareness of it and hopefully some of it I’ll be able to take across with me and hoping to develop some kind of [HRM] initiation protocol...there’s a lot of uncertainty about who’s responsibility it is to make sure the patient’s INR is checked when they’re discharged...I’d say definitely is given me the starting blocks to take the work forward with me.”*

*(Second Pharmacist, Health Board 3)*

**Conclusions: The HRM element of the SPSP-PPC collaborative was seen as fitting well with pre-existing activities within the sites. Aside from data collection and reporting, the HRM change package was ongoing in the practice sites now for almost 2 years. There was a strong willingness from staff to continue with the HRM Care Bundle.**

## Client Outcomes

Proctor et al’s taxonomy also comprises Client outcomes, encompassing satisfaction, function and symptomatology (34). It is not possible at this point in time to ascertain the extent to which implementation of the HRM element of the SPSP-PPC collaborative has impacted on patient function or symptomatology, yet details on patient satisfaction can be reported on. When discussing the evidence to support the realisation of client outcomes, the “client” in this context will refer to the patient / carer.

## Patient Satisfaction

### Data Used in Analysis

- Select data from QA5a
- Community Pharmacy HRM Case Studies
- CE Short Patient Impact Interviews

No direct patient testing was conducted on satisfaction before, during or after HRM element implementation. Patient satisfaction was gauged via reports from the Away Team members. Early in the programme during the HRM Community Pharmacy Case Studies (June – Nov 2015), some staff felt that patients were not always willing to receive the intervention:

*“Most people ... [you] ask them another question about their ibuprofen and they’re a bit like, ‘For goodness’ sake – another thing – I’ve just got a sore head.”*

*(Health Care Assistant, Health Board 4)*

Staff noted that some patients were too busy at times, whereas others highlighted it was an issue to understand if the patient was actually listening to what they were saying. In one account the yellow card (warfarin care bundle) was useful in case the patient was not receptive to being spoken to:

*“Sometimes when you’re trying to explain, it’s quite difficult to actually get them to listen...[they] most of the time the kind of maybe dismiss what you’re saying or don’t really listen, are not really interested...they’re maybe just in a hurry... that’s why you give them the card, I suppose, so they can always read that in their own time.”*  
 (Dispenser, Health Board 4)

However, there was a perception that patients were becoming more aware of their medicines and the different things they had to do in order to take them safely e.g. with food, etc.

In QA5a (CE, Oct 2016) Away Team members were asked about patient awareness and value of the HRM care bundle; it was not a pre-requisite of programme participation to inform patients specifically about practice involvement with the SPSP-PPC. As Figure 33 shows the median Likert Scale responses of Away Team indicate agreement that patients were both aware of the HRM element and that felt that it was valued:

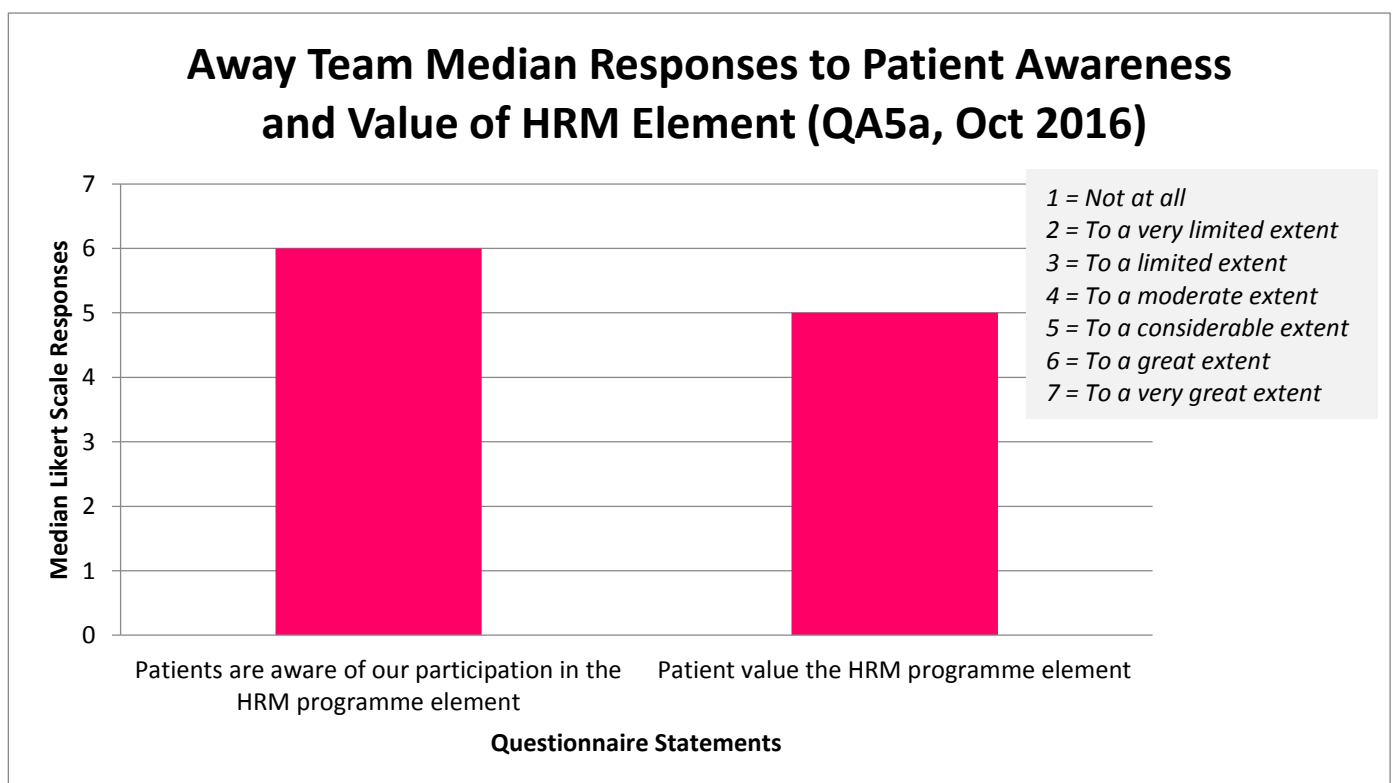


Figure 33: Away Team Response to Patient Awareness & Value of HRM

The topic of patient satisfaction was also explored somewhat during the Celebratory Event Short Patient Impact Interviews. Participants were asked to share patient “impact stories” around the HRM change package, and were asked how they felt the care bundle process was perceived by patients. Although some said that patients did highlight that they had already been told the information before, the response to receiving the bundle was generally positive:



*“It seems to be very good, yeah. “Don’t give me one of those cards, I’ve got one”  
[laughs]...”*

*I: Good so people are actually saying to you “No, I know this”?... So they’ve retained the information?*

*P: Yeah which is good”  
(Dispenser, Health Board 4)*

Furthermore, the care bundle had value for patients on a more general level, in that patients appreciated that the practice staff were taking time to speak to them almost regardless of the fact that it was about their high risk medicines:

*“Well we made an official appointment with [the patient] which we found was really helpful and he came and we gave him all the information, and he was asking lots of questions ‘cause he says that he feels like sometimes people don’t have time. So he asked lots of questions and I think now well he’s always coming in asking us questions...it’s quite good.”*

*(Accredited Checking Technician, Health Board 3)*

Therefore implementing the HRM Care Bundle with patients opened the door to communication between the practice team and the patient which in turn was perceived positively and as an accessible communication avenue by patients through which to enquire about any other health concerns.

***Conclusions: Although receiving the full extent of the HRM Care Bundle on a regular basis was perceived as laborious for some patients, 1 year post-intervention patients appreciated the communication channel the HRM element offered and also appeared to be retaining the information about their high risk medicines which could in turn positively affect patient care.***

### c. EVALUATION QUESTION 3: How did the intervention programme improve the process of Medicines Reconciliation?

#### Data Used in Analysis

- Select data from QA1-QA3 and QA5a & b
- CE Short Patient Impact Interviews
- Steering Group Minutes & SBAR Reports

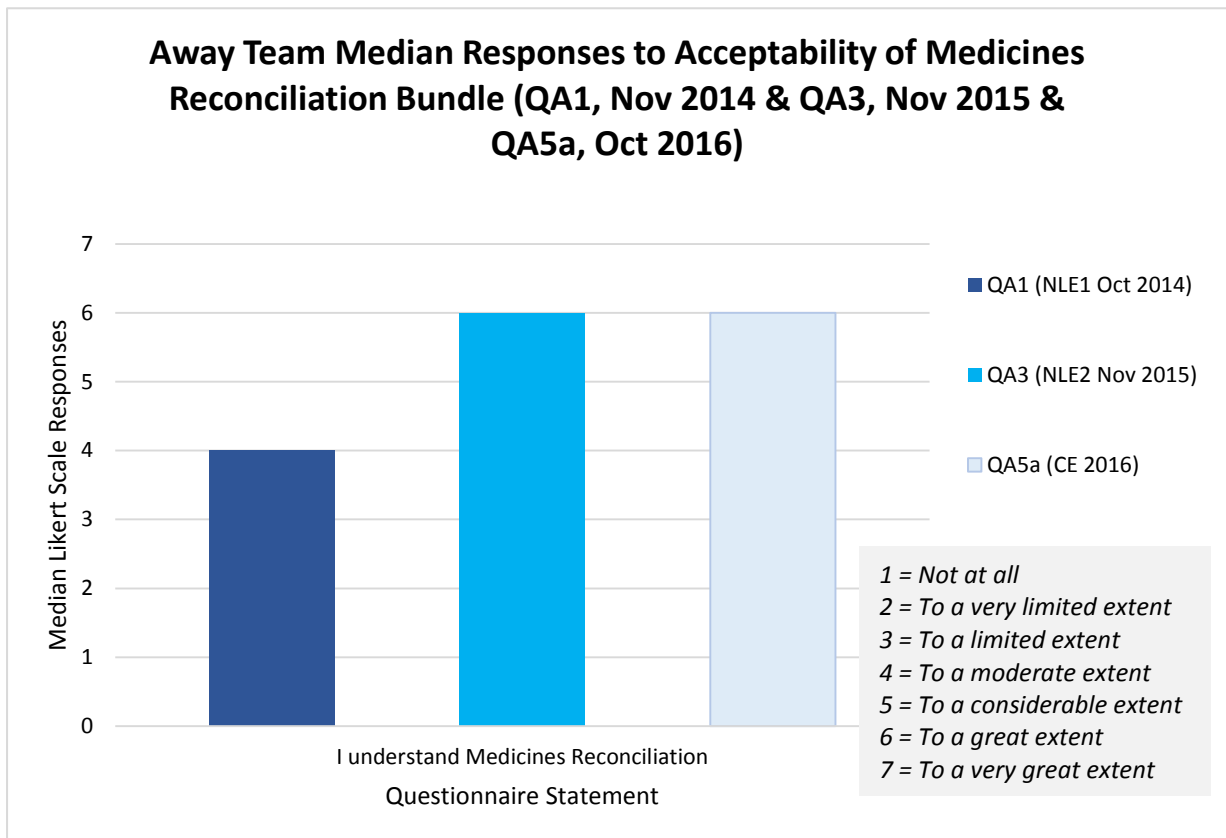
A single Medicines Reconciliation Care Bundle was agreed across the four Health Boards (see Figure 4 in SPSP-PPC Change Packages section). This section of the results will be reported under the Framework of Proctor et al's taxonomy of Implementation outcomes. The results will examine the acceptability, adoption, perceived appropriateness, feasibility, fidelity to, and sustainability of the Medicines Reconciliation element of the SPSP-PPC collaborative with Away and Home teams. The Implementation Cost element will not be examined as this project was funded and participating sites received remuneration for their participation. The Implementation Penetration element cannot be examined in this section due to a lack of supporting data.

### Implementation Outcomes

#### **Acceptability**

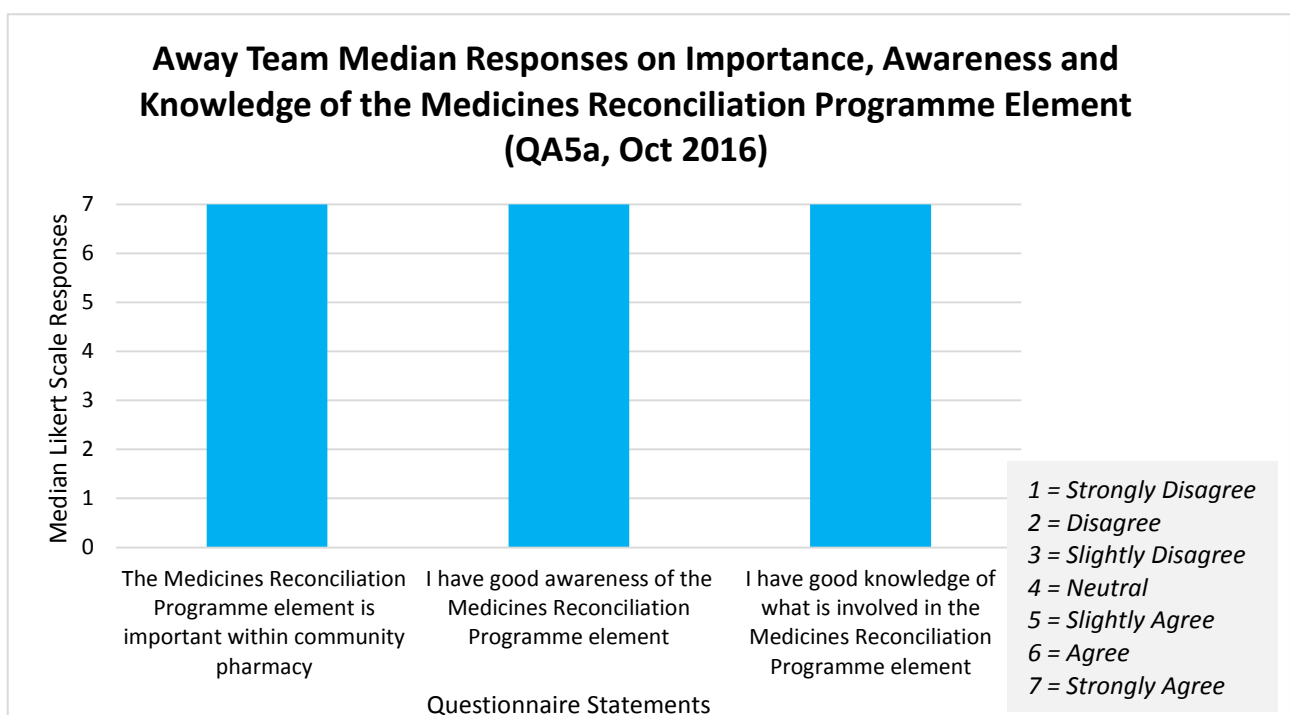
*Acceptability: The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory.*

Away Team acceptability of a Medicines Reconciliation element was tested at baseline (2014) and at 1 year intervals (QA3 in 2015 and QA5a in 2016). Figure 34 displays the median Likert Scale responses:



**Figure 34: Away Team Response to Acceptability of Medicines Reconciliation**

Figure 34 shows that understanding of Medicines Reconciliation was moderate at baseline (2014). This increased to a considerable extent at one year and was maintained as such at the Celebratory Event in 2016, showing that understanding and acceptability of the element improved. In contrast the Home Team response at the end of the project lifespan (QA5b, October 2016), was moderate amongst this staff group. Away Team participant awareness and knowledge of this change package element (QA5a, Oct 2016) was high at the Celebratory Event (Figure 35):



**Figure 35: Away Team Response in Importance, Awareness & Knowledge of Medicines Reconciliation**

These results were somewhat corroborated qualitatively during the Celebratory Event Short Patient Impact Interviews (Oct 2016). Away Team members were asked if they could provide details of their experiences with Medicines Reconciliation. Acceptability of Medicines Reconciliation was high, with most feeling that it was an important issue to tackle through the element:

*“It’s easier, [it] means that you’re not relying on having to get second hand information over the phone from the receptionist or a patient showing up a week after discharge with their tray expecting just to get another one... [I] think we need to know when the patient’s in hospital and that’s not done. I think we’re told at the last minute when they get out.”*

*(Job Role Unknown, Health Board 2)*

A small number of participants cited that they struggled to see the importance or impact of the care bundle itself due to them having very little opportunity to reconcile medicines:

*“It didn’t really impact, we didn’t have a lot of medicine reconciliation in our pharmacy at all.”*

*(Accredited Checking Technician, Health Board 1)*

It appeared that at least in theory, Medicines Reconciliation was viewed as important and impactful, yet some sites had more of an opportunity to engage than others.

***Conclusions: Understanding of Medicines Reconciliation improved amongst Away Team members over time. In general, Medicines Reconciliation was seen as important and acceptable.***

## **Adoption**

*Adoption: The intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as “uptake.”*

Medicines Reconciliation was implemented in the second year of the SPSP-PPC collaborative, with sites across and within Health Boards starting at different times. Information on the extent to which it was adopted, and how, is not equitable across all four Health Boards although it is known that all Health Boards were participatory in this change package.

The SBARs presented at the September 2016 Steering Group included the most up-to-date Medicines Reconciliation Compliance data for each Health Board. Figures 36-39 present compliance with the separate elements of the care bundle by Health Board.

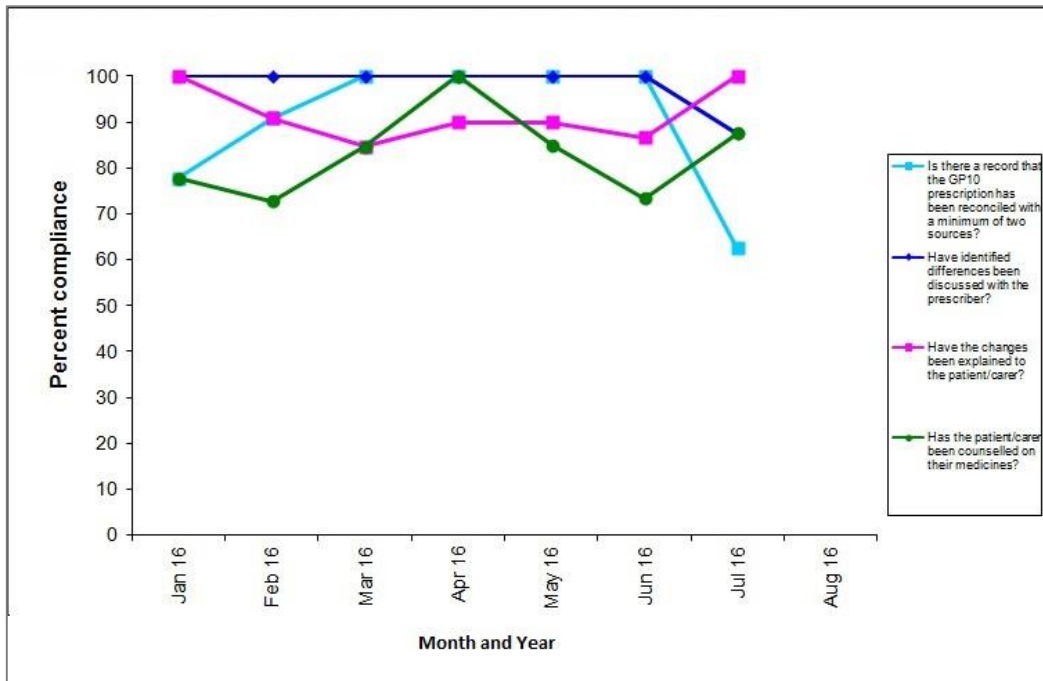


Figure 36: Health Board 1 Cumulative Data on Medicines Reconciliation Compliance (Jan - Aug 2016)

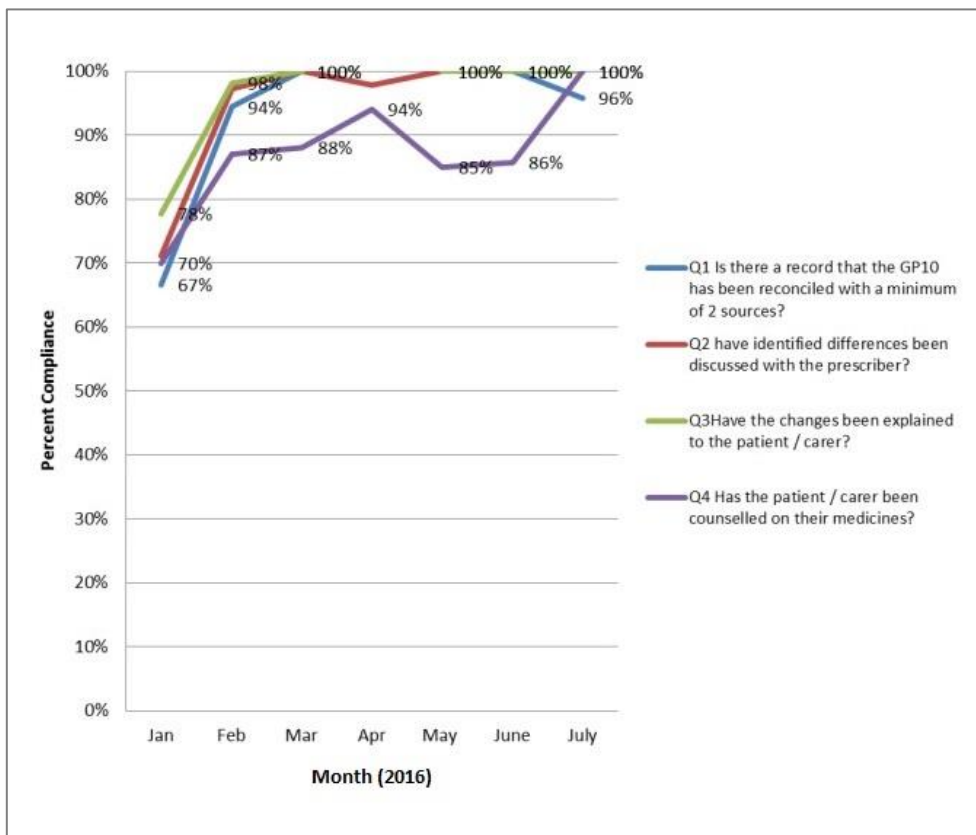


Figure 37: Health Board 2 Cumulative Data for Medicines Reconciliation Compliance Jan - July 2016

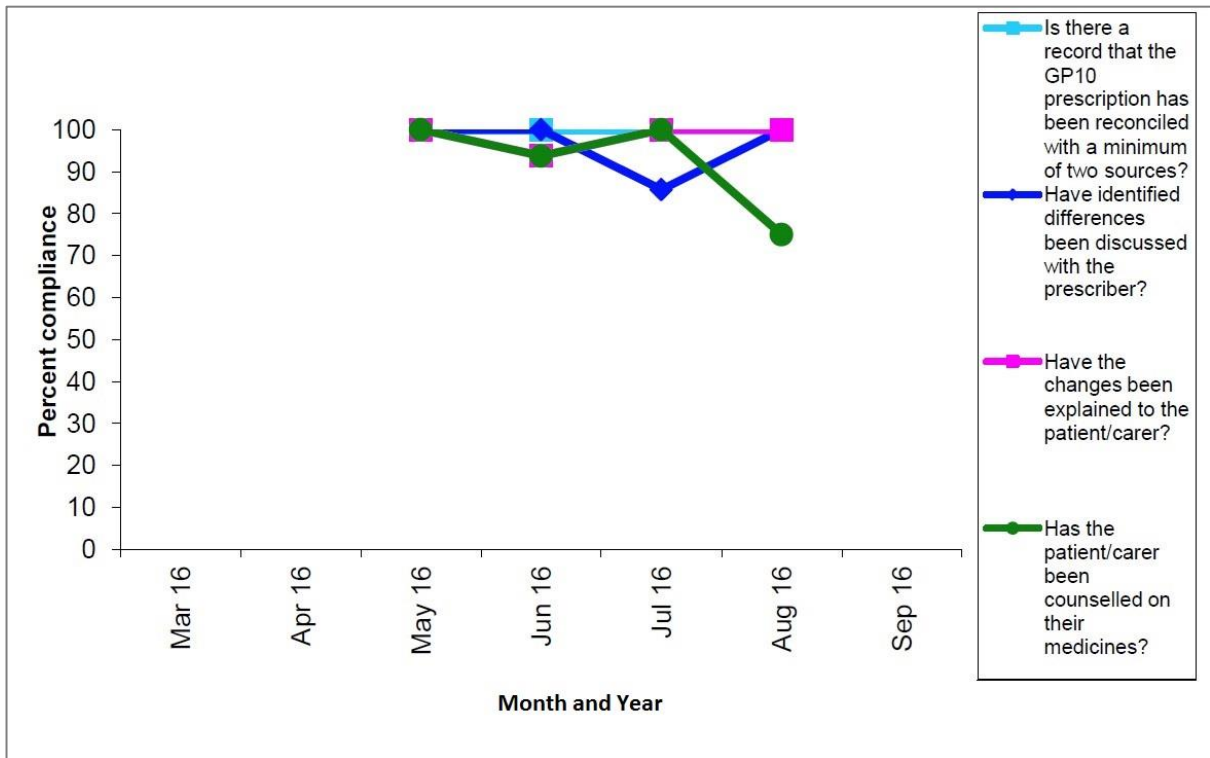


Figure 38: Health Board 3 Cumulative Data for Medicines Reconciliation Compliance March - Sept 2016

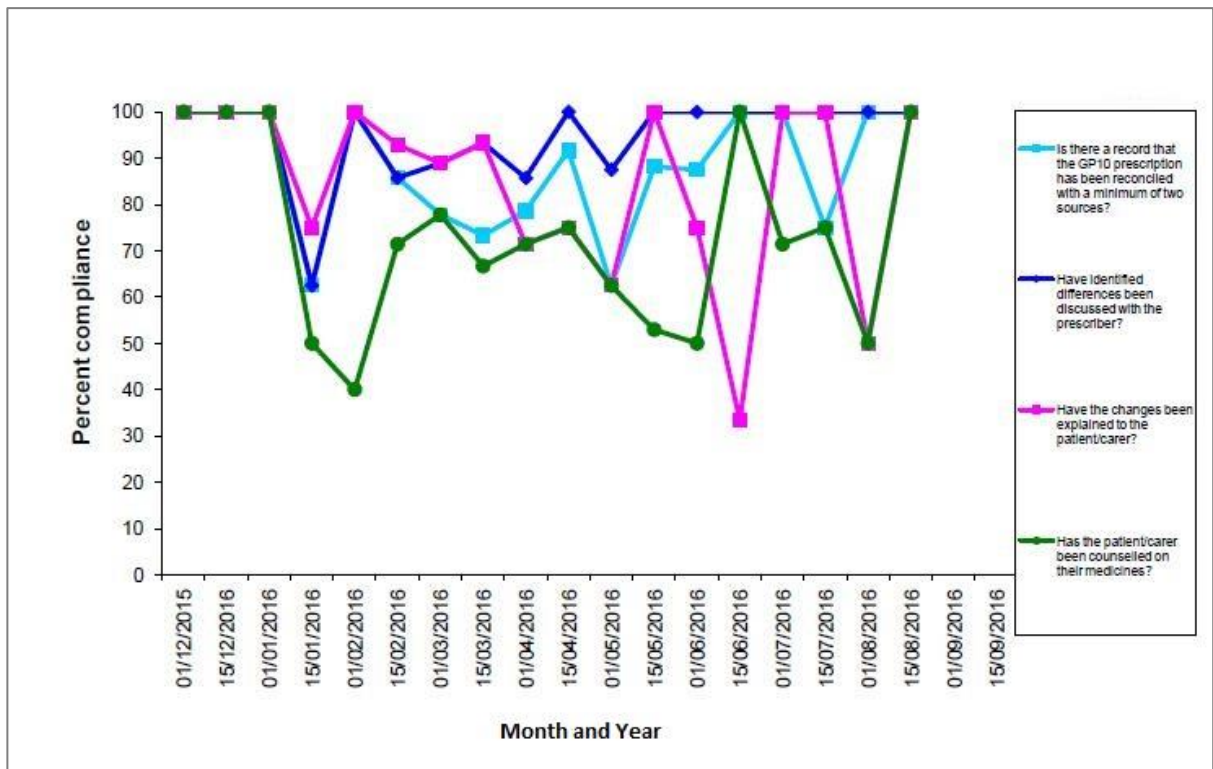


Figure 39: Health Board 4 Cumulative Data for Medicines Reconciliation Compliance Dec 2015 - Sept 2016

What the compliance data shows is evidence of varying adoption of the care bundle. Most NHS Boards show compliance rates of between 60 – 100% over the testing period, whereas Health Board 4 show greater variability in compliance to the standard process bundle, ranging between 50-100% for most elements delivered in community pharmacy.

Health Board 4 were also active in developing a patient medicines information tool to support the Medicines Reconciliation process with the help and insight from their patient representative. The “My medicines” wallet in which patients would be encouraged to keep their most up-to-date repeat medication list plus any other information about medicines taken (e.g. over-the-counter (OTC) medicines, copies of medicine sick day rules cards, high risk medicine information etc.) was developed and rolled out for testing.

What the data from the SBAR shows is a high level of basic adoption from all participating NHS Boards, with some modification and adaption to the care bundles as appropriate. One note of caution when considering the compliance data is that not all participating community pharmacies and dispensing practices submitted data continuously, therefore the charts may not be reflective of actual adoption and compliance of the full study sites

When considering the Away Team opinion on “We are doing all we can” for Medicines Reconciliation, the response moved from “Slightly Disagree” at the start of the programme to “Slightly Agree” by 2016, showing improvement with some further work required. (Figure 40). This may reflect the fact that sites have been reporting issues with accessing IDLs as well as the fact that less time has been spent on the Medicines Reconciliation element compared to, for example, the HRM Care Bundle.

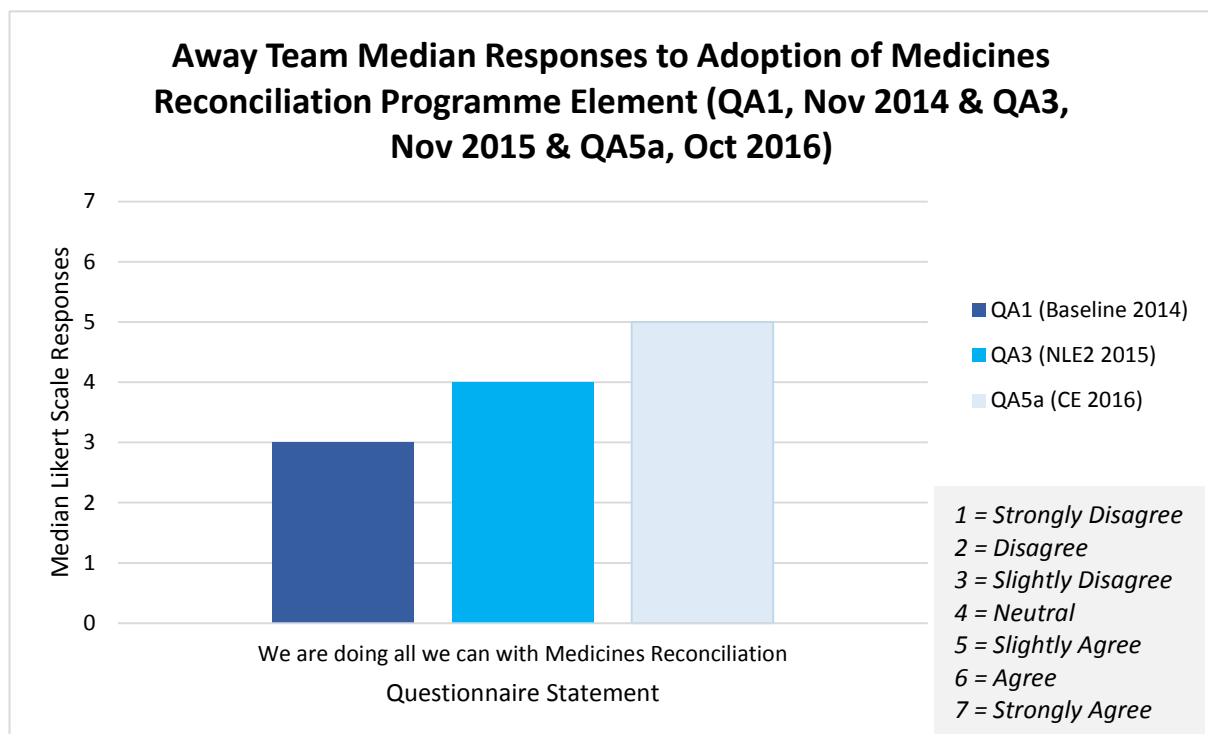


Figure 40: Away Team Response to Adoption of Medicines Reconciliation

From the Celebratory Event Patient Impact Short Interviews (2016), there was no indication that any pharmacy team had not actively adopted the Medicines Reconciliation element. A small number of participants cited that they had not had the opportunity to deliver the element itself mainly due to a lack of patients requiring Medicines Reconciliation. However, the general consensus was that Medicines Reconciliation was already occurring to an extent within pharmacies, and that the Medicines Reconciliation element was important, useful and used:

*“There’s been a massive impact with the medicines reconciliation, it’s been a lot of work and you know we’ve found so many issues where we have been doing a medicines reconciliation, almost makes you worry about when we weren’t doing it [laughs], nearly everyone we’ve done has had some improvement needed.”*

*(Registered Pharmacy Technician, Health Board 3)*

***Conclusions: It appears from the limited data that Medicines Reconciliation has been adopted to an extent within the practice teams.***

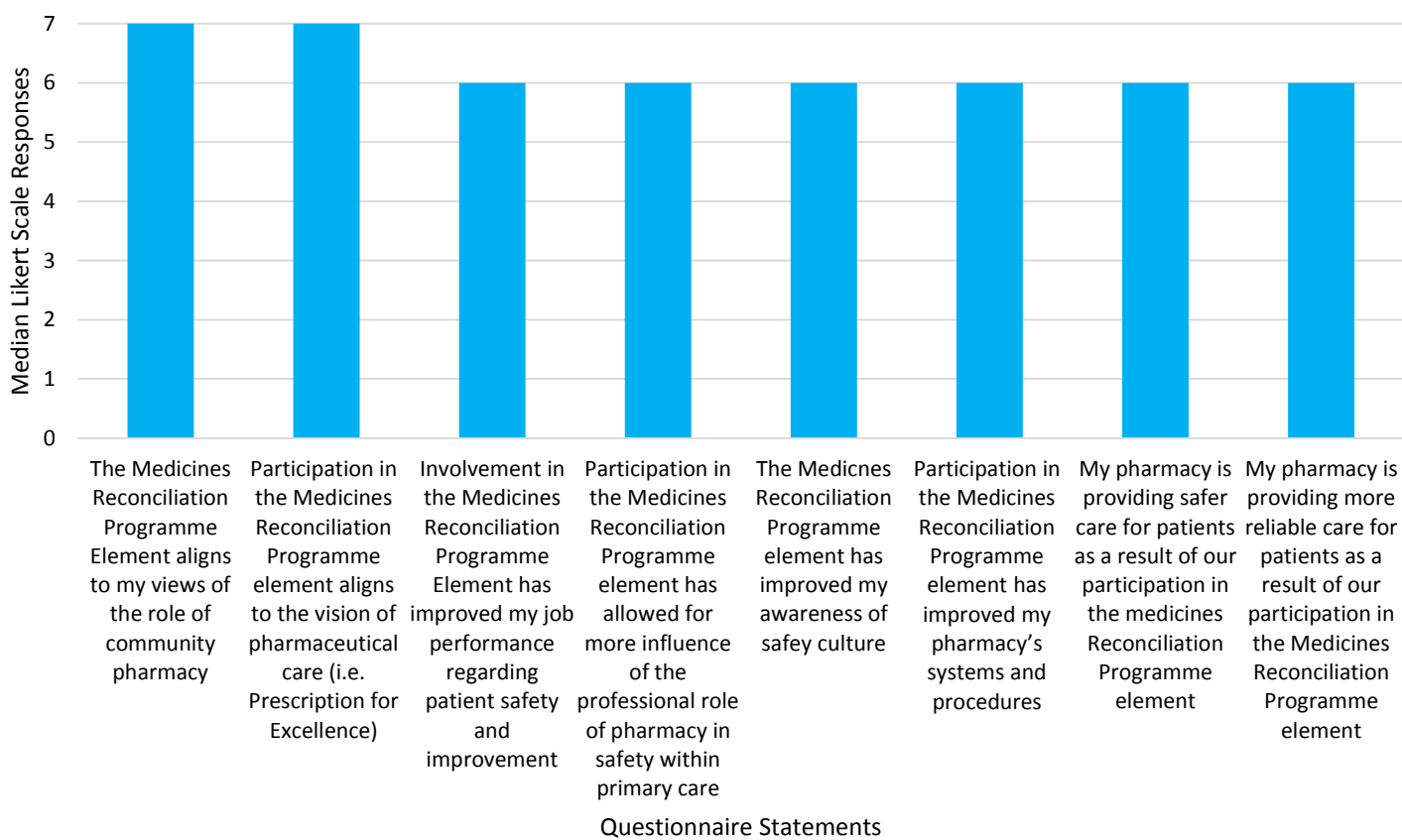
### **Appropriateness**

*Appropriateness: The perceived fit, relevance, or compatibility of the innovation or evidence based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem.*

In QA5a (2016) Away Team participants were asked to respond to various statements relating to the appropriateness, relevance and usefulness of the Medicines Reconciliation programme element. Figure 41 displays the median Likert scale responses:



### Away Team Median Responses to Statements Regarding Appropriateness of Medicines Reconciliation Programme element (QA5a, Oct 2016)



*1 = Strongly Disagree 2 = Disagree 3 = Slightly Disagree 4 = Neutral 5 = Slightly Agree 6 = Agree 7 = Strongly Agree*

**Figure 41: Away Team Response to Appropriateness of Medicines Reconciliation**

Agreement was high with all statements aligned to appropriateness of the Medicines Reconciliation element. Participants felt that the element aligned to their own views of the role of practices, as well as to the wider views and vision of pharmaceutical care. It was viewed as having a positive impact on job performance, process and professional role, and that it was useful in improving the awareness and realisation of safety culture in practices. Finally, it was also viewed as being practical and useful in delivering safe and reliable care for patients.

Views on the appropriateness of the Medicines Reconciliation element were also captured with some participants during the CE Short Patient Impact Interviews. Some reported that the element was in fact very similar to processes and procedures that were already being delivered within the community pharmacy, reinforcing that it was appropriate and useful:

*“The bundle when it came out was very similar to what we were actually doing anyway. All it was a case of was trying to document it and put down reasons for it.”  
(Second Pharmacist, Health Board 1)*

However, this participant also highlighted that delivering the element as stipulated by the SPSP team was not necessarily appropriate for all patients:

*“It highlighted the one issue that we had was not necessarily always passing the information to the patient or the carer...their independence of medicines was fairly removed anyway...and a lot of occasions we knew the person or the carer, either the person wouldn’t cope with the additional information [delivered to them through the Medicines Reconciliation process] or didn’t care about the additional information or the carer actually didn’t want to be involved...because of the bundle, we did push for it, it wasted our time.”*

*(Second Pharmacist, Health Board 1)*

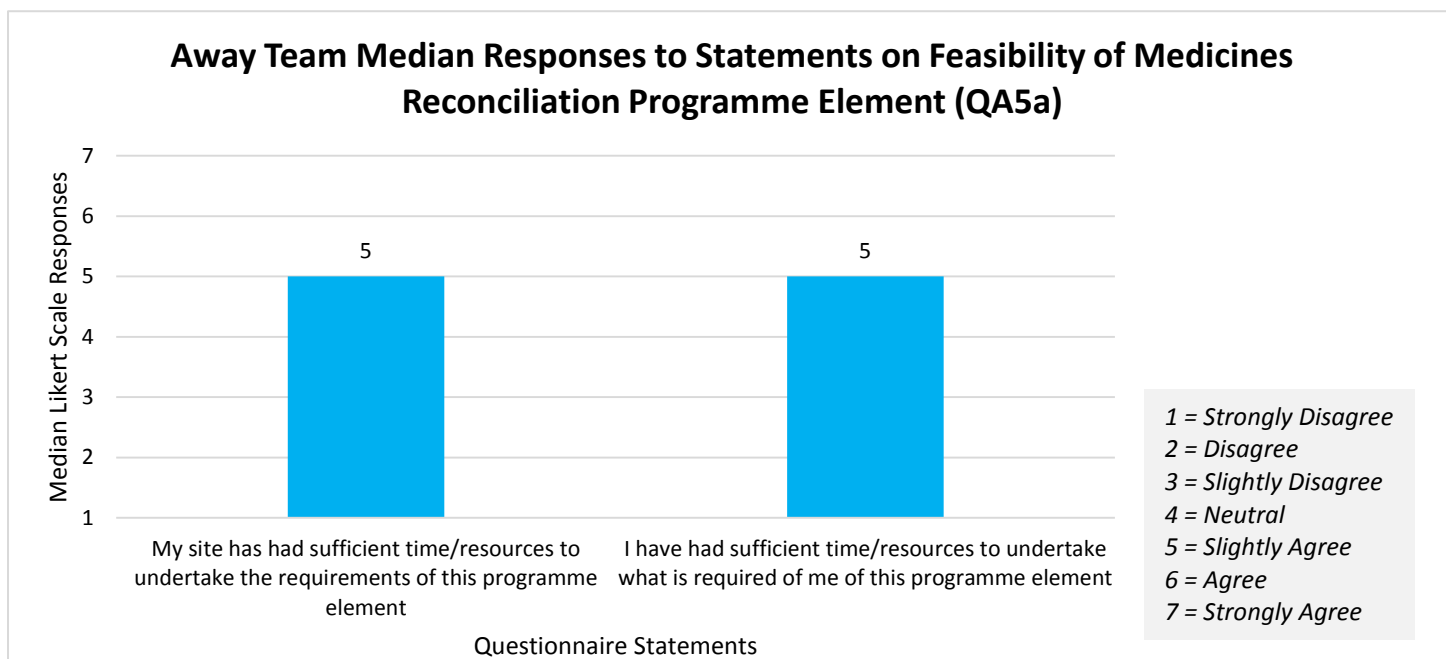
**Conclusions: The Medicines Reconciliation Care Bundle was seen as appropriate.**

### Feasibility

*Feasibility: The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting.*

Information relating to the feasibility of Medicines Reconciliation was reported on my some NHS Boards via the SBARs presented at the Steering Group. In April 2016, Health Board 4 reported via SBAR reporting that access to Immediate Discharge Letters (IDLs) via SCI store (NHS online patient information system, not ordinarily made available to community pharmacies) was in use at two sites however IT issues and computer firewalls were reported in SBARs as a major challenge to accessing IDLs. IDLs were also accessed via direct emails /other communication from GP practices and hospitals to community pharmacy at the other sites. Therefore, aside from the two sites who had access via SCI Store, all access to patient IDL was person-dependent and non-automated. In terms of systems, processes for recording the receipt of an IDL to trigger Medicines Reconciliation when the next prescription arrived was in place at four sites in April 2016. Furthermore, community pharmacies in Health Board 4 reported that dealing with the volume of IDLs was an onerous task in terms of time and resource. This contrasted with Health Board 3 who over the course of their involvement with Medicines Reconciliation only received 37 electronic IDLs (eIDLs) in total, resulting in a lack of opportunity to fully explore and develop the care bundle. Dispensing Practice-specific issues were around GPs not recording their reasons for making changes to patients’ medicines, which may result in an unnecessary and time consuming investigations into prescribing behaviours.

In QA5a (Oct 2016), Away Team participants were asked to score their agreement with statements regarding the feasibility of the Medicines Reconciliation element in QA5a (2016) (Figure 42):



**Figure 42: Away Team Response to Feasibility of Medicines Reconciliation**

Participant median responses were “Slightly Agree”. Feasibility of Medicines Reconciliation was explored further in the CE Short Patient Impact Interviews (Oct 2016), with the main challenge to adoption and delivery being reported as a lack of patients requiring reconciliation by some participants. The other main threat to feasibility was gaining access to the IDL or patient discharge information, which was critical for the Medicines Reconciliation process:

*“Well it’s just obviously relying on the hospitals providing you discharge, which doesn’t happen every single time. We’ve also had a few IT issues, I work for one of the bigger multiples so IT issues and accessing NHS mail to get the discharge hasn’t always been easy.”*

*(Pharmacist Branch Manager, Health Board 2)*

Feasibility of delivering the element was also dependent on the workload it produced, as one NHS Board who had electronic access to the IDL found that they were dealing with a large number of medicines discrepancies which would not have been highlighted to them had they not had access to the IDL. Therefore, although good access to the IDL resulted in the identification of more errors, the workload this produced was something of a challenge. Finally, one participant found that sharing the information with the patient on changes to their medicines post-discharge was not always feasible or even wanted. The result was that patients/carers were not engaged when discussing their medicines due to the “avalanche” of information. Staff responded to this by highlighting that information was available if they chose to access it:

*“It highlighted the one issue that we had was not necessarily always passing the information to the patient or the carer...either the person wouldn’t cope with the additional information or didn’t care...because of the bundle, we did push for it, it wasted out time, confused the other side...We then kind of adapted it and used it as a prompt for information, so opposed to this all-encompassing we have this information we’re telling you, we changed...if you want information get in touch...we found there wasn’t huge*

*engagement from it, but that kind of highlighted to us that there actually wasn't a need for massive engagement."*  
(Second Pharmacist, Health Board 1)

The limited timeframe of current testing limits the findings but has identified some of the early challenges with delivering this care bundle.

**Conclusions: The major challenge to feasibility was access to the IDL, which when resolved enabled delivery of the care bundle in practices.**

## Fidelity

*Fidelity: The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers.*

As mentioned previously the care bundle questions were consistent across the Health Boards. However Health Board 4 chose to add an additional communications-focused care bundle. Therefore, although there were modifications made to the delivery of the care bundle, the basic common care bundle across the entire project was delivered as agreed by the SPSP Team.

How pharmacies accessed discharge information and which patients were targeted varied across Health Boards (i.e. some information was accessed via electronic systems versus email, and some Boards only reconciled patients who had their medicines supplied through "Dosette boxes").

Participants were never directly asked if they delivered the care bundle questions as stipulated by the programme team, however as discussed under Feasibility, one pharmacy site adapted how the care bundle was delivered to make it acceptable to patients:

*"We then kind of adapted [the bundle] and used it as a prompt for information, so opposed to this all-encompassing [thing]...it was acknowledging that a change [to their medicines] had been made, but putting [the onus] back on the patient or the carer...it allowed them the small information to be able to work on...to kinda hand it back to the patient...the reconciliation process never really changed because we were doing that anyway."*

(Second Pharmacist, Health Board 1)

**Conclusions: The Medicines Reconciliation Care Bundle was delivered across all 4 Health Boards but the patient cohort to whom it was applied varied. One Health Board did add to the bundle a second list of questions relating specifically to communication.**

## Sustainability

*Sustainability: The extent to which a newly implemented treatment is maintained or institutionalized within a service setting's ongoing, stable operations.*

As the Medicines Reconciliation element was in its relative infancy in the programme compared to the other more established HRM and Safety Culture elements, sustainability of this element could not be fully explored. However, in QA5a, when Away Team participants were asked to rate their agreement that they would like to continue with the Medicines Reconciliation Care Bundle there was a high level of agreement.

As discussed in previous sections it is also arguable that timely and reliable access to patient discharge information will affect sustainability of the service over time. Furthermore, ownership of delivering the element and the processes this involves within the practice may also have an impact. During the CE Short Patient Impact Interviews, one participant discussed how delivery of the care bundle appeared to cease at some point due to an interruption in communications:

*“There was like a month or two where we weren't getting any emails and I don't know if it's because the Pre-Reg finished and no-one else was given the responsibility, but I just feel like that was a silly reason to have stopped that service when we knew that there was patients in and out of hospital having to go back to the way things were.”*

*(Job Role Unknown, Health Board 2)*

When the process is dependent on one individual in the pharmacy, this may affect sustainability of service delivery. However, in practices where the Medicines Reconciliation process was already robust and established, it is feasible that sustainability of the care bundle is made more possible:

*“Our Meds Rec process was pretty robust in the first place, we have on a week-to-week basis a dedicated team solely focused on compliance aids. So, that team has always taken it upon themselves to deal with any reconciliation...so already we were pretty focused upon it. The bundle when it came out was very similar to what we were actually doing anyway.”*

*(Second Pharmacist, Health Board 1)*

One pharmacy had decided to deliver the Medicines Reconciliation Care Bundle in patients' own homes, as this was seen as a more suitable environment in which to reconcile medicines (i.e. the patient in their own setting with their own medicines around them):

*“P: Well we use our Technician to actually go out and visit the patients at home, because a lot of them you know they've just come back from hospital so they're not fit and able to come into the pharmacy...you've got access to their medication...[a patient] had the wrong inhaler when they'd come out of hospital...it was someone else's inhaler...to have someone else that's going through [medicines counselling] again with you in your home*

*and you might have had time to think about questions...so it's just about doing what we do every day but doing it in a wee bit different way."*  
(Second Pharmacist, Health Board 3)

Although this was seen as appropriate and successful within that team, such a service may not be sustainable beyond the SPSP-PPC collaborative lifespan.

**Conclusions: Medicines Reconciliation itself is sustainable yet depends on a number of factors including: timely and reliable access to IDLs; appropriate staff involvement; and delivery of the bundle in a realistic and replicable way for all patients requiring reconciliation.**

## Client Outcomes

Proctor et al's taxonomy also comprises Client outcomes, encompassing satisfaction, function and symptomatology (34). It is not possible at this point in time to ascertain the extent to which implementation of the Medicines Reconciliation element of the SPSP-PPC collaborative has impacted on patient function or symptomatology, yet details on patient satisfaction can be reported on. When discussing the evidence to support the realisation of client outcomes, the "client" in this context will refer to the patient / carer.

### Data Used in Analysis

- Select data from QA5a
- CE Short Patient Impact Interviews

## Patient Satisfaction

No direct patient testing was conducted on satisfaction before, during or after The Medicines Reconciliation element implementation. Patient satisfaction was gauged via reports from the Away Team members.

Patient experience of Medicines Reconciliation is first discussed in an SBAR report in September 2016. NHS GG&C report on a patient story whereby a patient underwent the Medicines Reconciliation bundle with their Community Pharmacy, only to have the procedure repeated a short while later by the GP, resulting in some unwanted duplication of process. In terms of medicine reconciliation, the patient was very supportive of an additional check by the Community Pharmacy yet felt that there was a need to improve communication between the Community Pharmacy and the GP in order to avoid duplication. The patient was happy to discuss medication issues with the pharmacist but not on a repeating basis, as this could come across as patients not being listened to or that their answers are not recorded for future reference.

In QA5a (Oct 2016), Away Team members were asked to rate their agreement on whether patients were aware of the Medicines Reconciliation element, had been impacted positively, and that they valued the Medicines Reconciliation Care Bundle element (Figure 43):

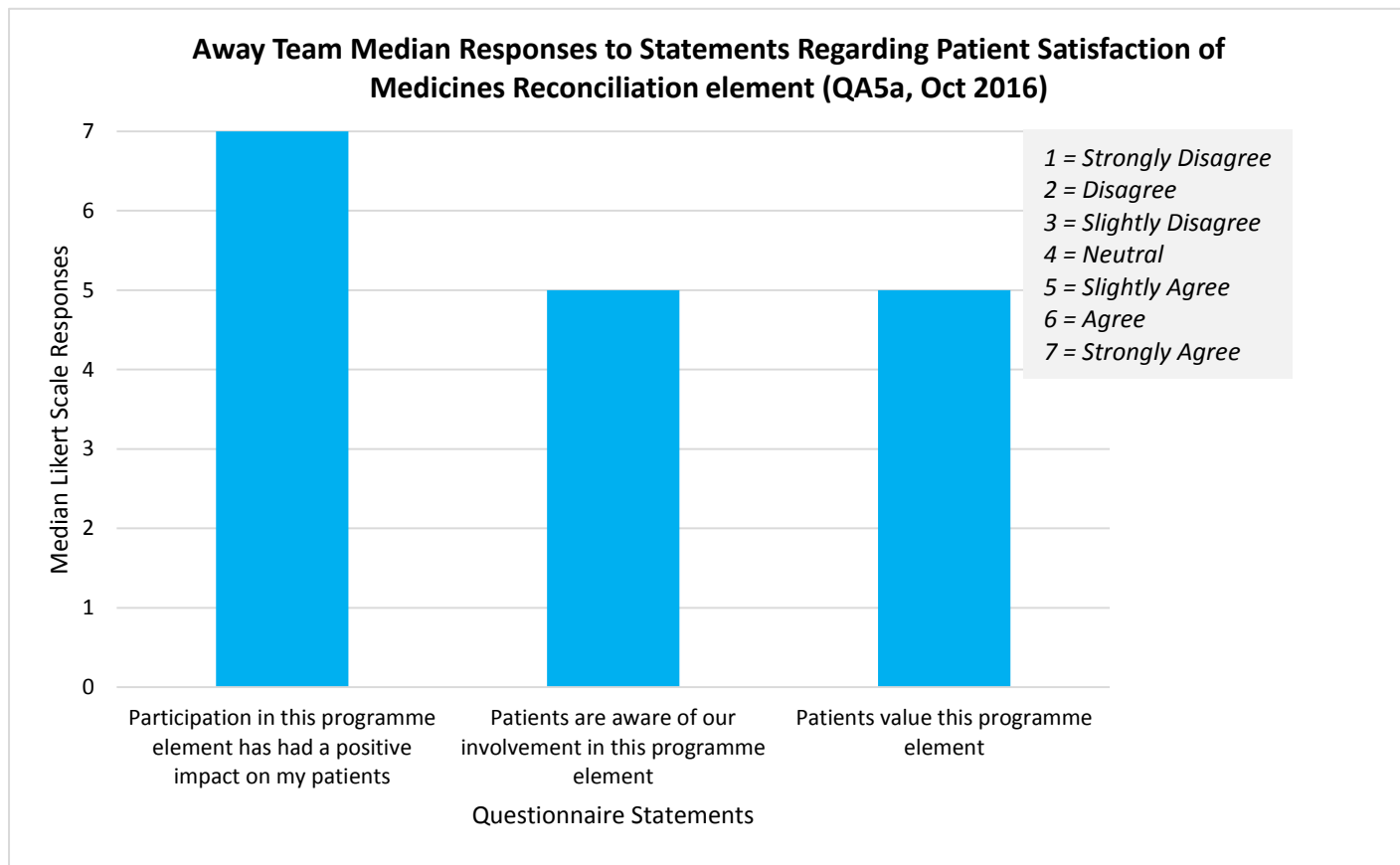


Figure 43: Away Team Response to Patient Satisfaction of Medicines Reconciliation

There was a high median level of agreement that the Medicines Reconciliation element had positively impacted patients. The median participant response was Slightly Agree for statements regarding patient awareness and value of the programme element. This may be due to the fact that patient awareness and value of the element was being assessed by proxy therefore respondents may not have been sure what patient opinion actually was.

Away Team members provided some insight into examples of patient satisfaction with service during the CE Short Patient Impact Interviews. One participant working in a Dispensing Practice described how implementation of the care bundle on the whole was having a positive effect on patients and was seen as valuable:

*“P: Yeah [it’s] good for the patients as well, and I think the patients have been quite happy, you know to have the doctors call, ‘cause modern day doctors aren’t the same as the old fashioned ones [laughs] so I think some of them have been quite they’ve had a little bit of extra-*

*I: A little bit of extra time spent on them*

*P: Yeah”  
(Dispensing Lead, Health Board 4)*

Additionally, another participant highlighted how the care bundle process opened up communication channels with patients and the pharmacy team, which was appreciated:

*“Better communication with the pharmacist. More trust and understanding and I think from the patient’s point of view the pharmacist is seen as a knowledge of the medicines...they’ve been given this individual attention...other people are caring for them cause [the pharmacy] do know what’s happened while they were in hospital and what the change has been.”*

*(Pharmacist, Health Board 4)*

Furthermore, some participants provided specific examples of scenarios which resulted in a patient satisfied with the reconciliation process:

*“We had a patient that was discharged and she was housebound and had no relatives... we had to do a home visit and it was found out that [the hospital] had changed some of her medication...When I went to her home, she did not have the medication...[she had] a lot of the medication which had been stopped, so if we hadn’t gone and done that house visit...her changes were so drastic that you know, it needed checking up on, and it turned out... that the lady wasn’t coping with her medication anyway which probably led to her ending up in [hospital]... she’s a much happier, healthier woman, you know and that’s off of the back of the Meds Rec.”*

*(Registered Pharmacy Technician, Health Board 3)*

Through the Medicines Reconciliation process, this high risk and hard to reach patient received the medicines that were intended for them and had the medicines that were no longer intended for them stopped. Furthermore, a general issue of the patient struggling to cope with their medicines was realised which in turn was resolved through the care bundle delivery resulting in a more content and reassured patient.

***Conclusions: Away Team members provided examples of how the Medicines Reconciliation process had benefited patients and elicited a positive satisfactory experience for them. The process seemed particularly beneficial for those patients who are hard to reach, and facilitated an open communication channel between the patient, the pharmacy and secondary care providers.***



## d. EVALUATION QUESTION 4: How did the intervention programme improve awareness and perception of safety climate?

This section of the results utilises Proctor et al's Taxonomy of Implementation Outcomes (34) to study how the SafeQuest-CP questionnaire was introduced into practice and enable measurement of indicators of successful implementation. Proctor's taxonomy details eight concepts: acceptability; adoption; appropriateness; feasibility; fidelity; implementation cost; penetration; and sustainability. The reported analysis reflects the common themes and subthemes raised within the qualitative data, organised by Proctor et al's taxonomy's components and supported by quantitative measurement from the SafeQuest-CP questionnaire, where appropriate

### Implementation Outcomes

#### Data Used in Analysis

- Select data from QA1-QA5a & b
- Safety Culture Short Interviews (NLE2, 2015)
- CE Short Patient Impact Interviews (CE, 2016)
- SafeQuest-CP Summary Data 2015 / 2016

#### Acceptability

*Acceptability: The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory.*

This dimension was operationalised through mentions of the intervention being agreeable to, or liked by, the site staff. Within the tool staff could be identified as management and non-management/support staff. Two themes arose – the site staff's emotional response to the intervention and also perceptions of the intervention's usefulness.

#### Staff Emotional Response

These responses related to the thoughts and feelings around the safety culture tool. There were differences between the management and non-management perceptions. Some respondents were generally positive about the whole experience, seeming to value the opportunity to use the SafeQuest-CP questionnaire:

*"I liked it, I thought it was an excellent way to gain some feedback and I really like feedback."*

*(Pharmacist, Health Board 1)*

*“I think it was good that all the data was anonymised, so people felt free to say whatever they wanted, and there was no threat of repercussions afterwards.”  
(Pharmacist, Health Board 4)*

However, there was negativity surrounding the tool’s use. Within management staff there were initial concerns raised regarding the results and anxiety surrounding the implications of negative results i.e. if staff members highlighted issues:

*“I felt a little bit nervous about it to begin with because ... I hadn’t done one before and I wasn’t sure quite what it was all about. A bit nervous about getting some negative feedback as the pharmacy manager, so I’d say a little bit anxious. But having then done it, I could then see the benefits of it.”  
(Pharmacist, Health Board 4)*

It is worth noting that, for the management-level staff interviewed, taking part in the process seemed to remove the concerns as the results were predominantly positive. However, there were reports of results not being fed back to the team or being discussed ineffectively where issues were raised:

*“there’s not been any like team meeting or anything like that which is really disappointing because there’s a lot of aspects that could be improved upon but I think its more management is worried about confrontation ...worried actually having that, so I don’t know if its about having some support there for the management about how they can go about it if you’re not so confident about that kind of thing”  
(Second Pharmacist, Health Board 3)*

For the support staff, negative feelings around the questionnaire predominantly focused on anxiety regarding how anonymous their responses were – perhaps because of the small pharmacy teams:

*“From speaking to other member of staff... they were still nervous that ... they were somehow coming to find out what they had put”  
(Pharmacist, Health Board 3)*

### **Tool Perceived as Useful**

Respondents viewed the tool as being valuable to their practice work. Some respondents felt that the process highlighted that patient safety involved the whole team rather than being something which only concerns the manager. It also served to highlight what was in place to support patient safety:

*“you get so used to things being law until you actually re-evaluate and the safety climate survey [I: has allowed you just to do that] aye it’s allowed us to have a second look, get the opinion of everybody in the shop so not just the pharmacist and the technicians because the counter assistants had such good ideas that nobody had thought of as well.”  
(Trainee Checking Technician, Health Board 3)*

The results were also viewed as worthwhile and beneficial to the pharmacy as a whole:

*“You could see you were doing well in certain areas and you were really proud of it and you could take from that and build on it”  
(Registered Technician, Health Board 3)*

In QA5a (CE, Oct 2016), there was a high level of agreement that the safety culture element was important within the site; that the safety culture element of the SPSP-PPC collaborative aligned to participants’ views of the site role; and aligned with the overall vision of Pharmaceutical Care (Prescription for Excellence).

***Conclusions: Throughout the application of the safety culture survey staff acceptability was variable some very positive others anxious about level of anonymity, particularly in small premises, and how to manage the output of the questionnaire where potential issues raised; some responses implying that no feedback was the reaction to such findings. Further work is necessary to support handling of survey output over time.***

## Appropriateness

*Appropriateness: The perceived fit, relevance, or compatibility of the innovation or evidence based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem.*

This construct included responses relating to whether the SafeQuest-CP questionnaire was suitable to be used within a community pharmacy/dispensing doctor setting in Scotland. It was not focused on whether the intervention was viewed positively or not. Thematic analysis drew out three themes—existing culture within the practice, practice features and staff interpretation of questionnaire content.

### *Existing Culture within the Practice*

Where the existing culture might be deemed “negative” – for example if staff did not feel that the management were approachable or if the management was not open to criticism – it may be that the tool is problematic:

*“The question “can you question management?” cause [he/she] is the only pharmacist and [he/she] is the manager of the shop ... some of the questions I thought she did take personally”*

*(Technician, Health Board 3)*

### *Practice Features*

It may be that appropriateness of the tool is dependent on the pre-existing environment. The number of staff was raised as an issue with potential for single staff members impacting the results in smaller sites:

*“We just had a quick look at them. The main problem is there’s only four of us, so it’s not particularly anonymous. It’s very skewed by one person”.*  
(Pharmacist, Health Board 1)

However, smaller sites may not have the capacity and expertise to develop these types of resources locally and saw the SPSP-PC as a resource whereas larger sites raised the issue of potentially confusing the SafeQuest-CP questionnaire with other questionnaires which are being used/overlap within their premises:

*“the bigger companies might have something set up in HR format but we’re just a small pharmacy, only independent, so we’ve never really had access to anything like these tools before – I definitely wouldn’t be able to design anything like this on my own – so it was a really useful tool to have.”*  
(Pharmacist, Health Board 1)

#### *Staff interpretation of questionnaire content*

A couple of points were raised which related to whether the staff understood the SafeQuest-CP questionnaire and the questions which were being asked. This related to there being multiple interpretations of the questions, possibly depending on job role and experience:

*“So one of the things that we noticed was our counter staff have got a different view of what safety means to the clinical staff so the technicians and pharmacists, so if they answered the question “how can we improve the safety for the customers or the patients?” and they automatically thought well we need to make sure there’s no boxes lying on the ground, where we would say we need to make sure there’s no errors in their prescriptions. So there was a couple of things that they’d maybe think- we maybe think that patient safety is great and we would out a high answer to that, but the customer assistants maybe at the desk they maybe oh no sometimes we’ve got boxes lying about the floor so our patient safety is quite low. So there was a wee bit of trying to figure out- trying to get everybody on the same page cause the questions and answers were quite broad, so we had a broad range of questions and answers to go through”*  
(Trainee Checking Technician, Health Board 3)

**Conclusions: the appropriateness of the safety culture survey was seen to be impacted upon my the environment in which it was to be used; both number of staff/staff roles completing the survey and the underlying culture within the site were seen as factors requiring consideration in the future effective use of the tool.**

## **Adoption**

*Adoption: The intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as “uptake.”*

This domain relates to the update of the tool across the sites during the study period. As part of the SPSP-CP program all sites were encouraged to access the SafeQuest-CP questionnaire through the provided web access, complete, generate a report and discuss this with their staff. In April-May 2015, 83% (24/29) of sites completed the tool in contrast to only 64% (18/28) of sites one year later. This uptake rate varied across the NHS Boards with update lowest in NHS GG&C and highest in Health Board 1 who maintained 100% site participation over the program. Table 4 details the number of sites and participants completing the SafeQuest-CP questionnaire at both time points by Health Board.

**Table 4: SafeQuest-CP Questionnaire Completion Rates 2015/2016**

VARIABLE	Health Board 2	Health Board 3	Health Board 4	Health Board 1	TOTAL
<b>Time period 1 (2015)</b>	8 sites	3 sites	6 sites	7 sites	<b>24 sites</b>
<b>No. of sites</b>	51	34	31 participants	54 participants	<b>170</b>
<b>No. of participants</b>	participants	participants			<b>participants</b>
<b>Time period 2 (2016)</b>	3 sites	5 sites	3 sites	7 sites	<b>18 sites</b>
<b>No. of sites</b>	13	48	8 participants	51 participants	<b>120</b>
<b>No. of participants</b>	participants	participants			<b>participants</b>

During the Celebratory Event Short Patient Impact Interviews, participants were asked how many of the Safe Quest-CP questionnaires their site had completed. A total of 8 (61.5%) had completed both, while 3 (23.1%) had completed the first in 2015 and 2 (15.4%) had not completed either. Some participants cited the reasons for not completing the second survey as time constraints, issues with changovers in staff, sickness and maternity leave.

**Conclusions: The uptake of the SafeQuest-CP questionnaire reduced over time and at present the reasons are unclear; general messaging around time and resources may in part explain this pattern of use.**

### **Feasibility**

**Feasibility: The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting.**

This outcome measure was interpreted as whether it was possible to carry out the SafeQuest-CP questionnaire within the site settings. There was overlap between the feasibility and appropriateness dimensions; however, feasibility was interpreted as the practicalities of the tool (e.g. the mechanics of using the questionnaire or issues surrounding implementing the tool fully) rather than site specific

issues. Two themes were raised within this measure: logistics of completing the tool and practice features.

#### *Logistics of Using the Tool*

This included the physical components of the tool and its delivery - for example functioning IT, timing for completion, and structure of the questionnaire. Participants were generally positive if these things functioned well:

*“Completing the survey I think was very straight forward as I said as the fact it was online and the process was well explained it told the staff what they needed to do that made it fairly simple”*

*(Pharmacist, Health Board 3)*

Where there were issues with accessing the tool for reporting, this had an effect on the implementation of the tool:

*“I haven’t seen the results. I couldn’t access them. I feel a bit embarrassed about this but I couldn’t access them. I tried a couple of times and I can’t remember if it said my password was wrong or if it.. I seem to think it kept taking me back to login screen and eventually I contacted .... and she put me in touch with someone else – I think it was probably ..... got back to me with a suggestion of a fix, somebody did anyway, said “Why don’t you try this?” and it still didn’t work. And then to be honest I forgot all about it until yesterday.”*

*(Pharmacist, Health Board 1)*

#### *Practice Features*

The SafeQuest-CP questionnaire was not just about completing the questionnaire; a follow-up meeting to discuss the results was integral to the intervention. This was affected by practice specific factors. Some sites reported no issue in having the meeting, aligning it to other routines in the practice pharmacy whilst some sites held multiple short feedback sessions on particular sections for the tool:

*“We complete a team check survey every month as part of our ongoing thing through the company anyway so we just sort of carried on from there, and sort of “what did you think”, “how could you do this” etc.”*

*(Pharmacist Branch Manager, Health Board 1)*

*“We’d agreed within the health board group that we would do this in sort of snippets so we would take every topic and we’d- you were gonna have a five minute session every topic to see what was going on, what we could do better and any opportunities for change that we could implement. So we did one topic a week over six weeks..... it was really good because it was just five minutes at the start of the day or round about tea break.”*

*(Pharmacist, Health Board 4)*

Other sites found it more problematic with time, logistics and staffing issues in particular being raised as impediments to running all-staff meetings:

*“If we were a quieter pharmacy, if we knew there was a quieter time of day, or week, then absolutely we would’ve get all staff members in. I would’ve like to have had the opportunity to fully discuss it. As it was, I haven’t discussed it with every member of staff. But having said that, every member of staff has seen the results.”*  
*(Pharmacist, Health Board 1)*

*“we’ve got a really large team and we, some of which are part-time, we’re open right the way through the day, there’s no point that we’re closed and with part time work and things it’s really hard to get hold of everyone [I: Yeah] near impossible [I: Yeah] when you open to the public the entire time that your open..... as I say full team huddles just weren’t really an option or maybe they were, it’s just we couldn’t find a way to implement it”*  
*(Second Pharmacist, Health Board 1)*

At the Celebratory Event (QA5a, Oct 2016) when asked about the sufficiency of time and resource in delivering the safety culture survey, Away Team participants agreed that they could cope with the demands of the Safety Culture element, but only slightly agreed that their pharmacy and they themselves had sufficient time / resource to undertake the requirements of the safety culture element (Figure 44):

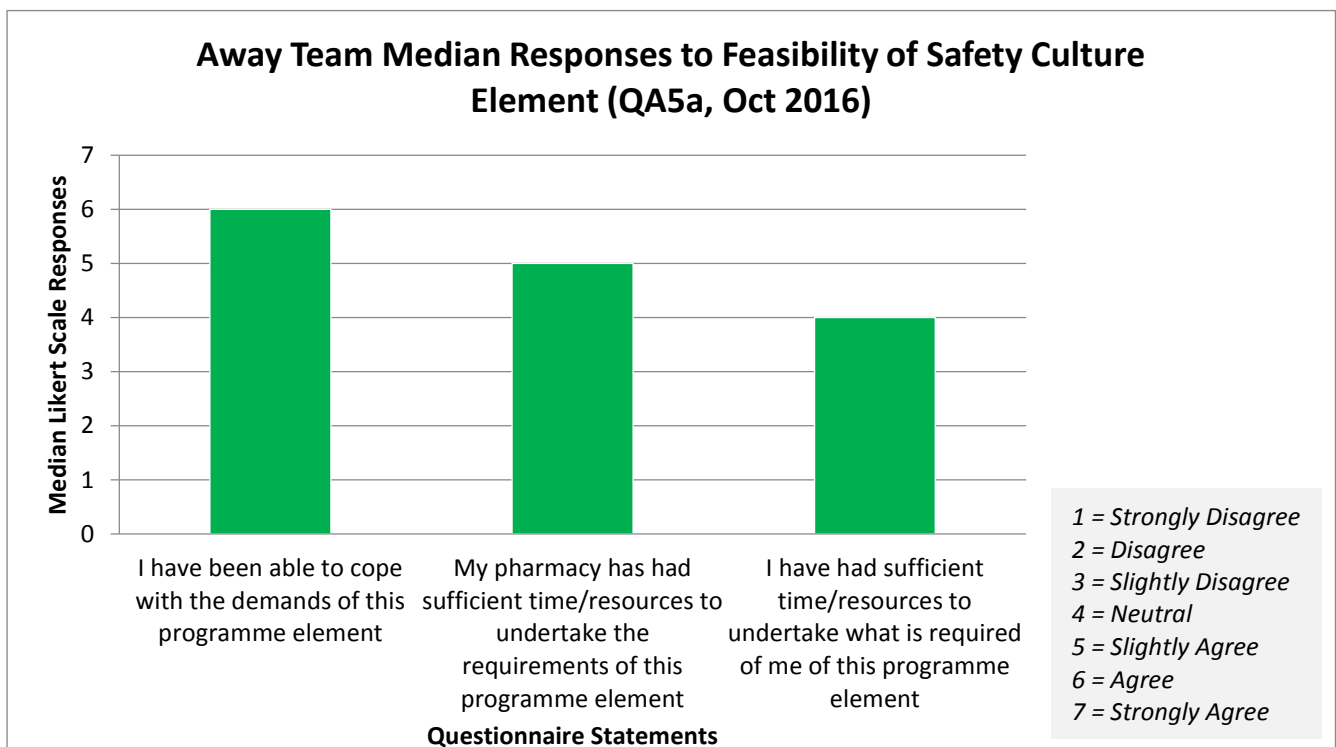


Figure 44: Away Team Response to Feasibility of Safety Culture

**Conclusions:** *The tool was considered feasible to deliver where there were no issues with the logistics of accessing the tool and the results were either being integrated into current practice systems and/or segmented into sections for reflection and discussion. Where this was not the case challenges remained on use of the tool.*

## Fidelity

*Fidelity: The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers.*

Fidelity was interpreted as the extent to which the parts of the intervention were implemented as intended. In this instance, that meant that the questionnaire was completed and also there was feedback to the practice staff regarding the results. Preferably this feedback would be given through a meeting. The theme which emerged in this construct was results dissemination and the intended audience of the results.

### Results dissemination

Some participants reported the results being fed back in different ways: some provided feedback direct to particular staff groupings when staff numbers were potentially too large to run a single group meeting; whilst others ran group discussions either covering the full feedback or divided into smaller sections over a time period:

*“We kinda fed information out that was specific to people’s job roles. [I: Okay, yup] So we tailored it to suit and then spoke with them, and through that there was a certainly a drip feed scenario [I: Okay] where hopefully the teams for each job role knew what they were doing ..... but it meant that we didn’t have to go through everything with everybody [I: Everybody, because it wasn’t useful] Yeah and as I say full team huddles just weren’t really an option or maybe they were, it’s just we couldn’t find a way to implement it”*

*(Second Pharmacist, Health Board 1)*

*“the only thing was the pharmacy we had-the pharmacist at the time didn’t really support it very much so that was one of the struggles that we had, so we didn’t really learn anything form the first time em and we didn’t change anything but the second time we did it this year, we had a different pharmacist and she was a big fan of it so everyone in the pharmacy took part in the survey and then we got the results back, everybody got a copy of the results and we had a team meeting at night times so everybody volunteered to come in cause everybody was as keen on- if you tell them it’s gonna benefit them then they’re keen to come in.”*

*(Trainee Checking Technician, Health Board 3)*

### Intended Audience and limited dissemination

This theme was in relation to staff not getting the results and /or discussing the SafeQuest-CP questionnaire. There was a feeling among some respondents who had not received the results that the management felt that the results were for them predominantly and therefore feeding back to the other staff was not viewed as important:

*“So the management got the results and were quite pleased with the results so therefore felt it didn’t need action*

*R3- so you didn’t have team meetings or discussions?*



G3- no team meeting”  
(Technician, Health Board 3)

Once the second survey was conducted and comparisons could be made within the pharmacy some participants reported that this was challenging when results were not as positive and was leading to less engagement:

*“the first year was so good, that it’s been felt that the second years bad and that’s somehow, you know, embarrassing almost to share, actual fact I think it gives us a lot to work on, you know. And the tool, it’s frustrating its nae been used as it should, we could make a big difference [I: Okay] sharing it out. I also think the first year, people were not just sure how confidential it was you know, I think the thought of it their answers could be traced back [I: Okay], whereas the second year they were made more aware that it was anonymous”*

*(Registered Technician, Health Board 3)*

**Conclusions: Feedback and discussion of the results was variable ranging from no feedback with different rationales given to a range of techniques enabling feedback/discussion with groups/subgroups of staff contextualised to the setting.**

## Penetration

*Penetration: The integration of a practice within a service setting and its subsystems.*

Penetration relates to the extent of integration of a practice within the service setting. This was captured at two time points, the NLE2 (Nov 2015) and CE (Oct 2016). The corresponding theme related to the application of the results.

### Application of Results

In the early feedback the Safety Climate Survey Results were used in some settings to encourage staff to view the pharmacy positively and to improve processes:

*“So it actually kind of helps to bring a positive spin and you have evidence for that. So it’s not just a case of things will get better of course they will, it’s a case of we are short staffed at the moment because of x, y and z, but this doesn’t carry on because everyone answered this honestly and equally.”*

*Pharmacist, Health Board 1)*

However, it was not universal that the results were acted upon – some participants reported the results making no change to practice processes at both time periods:

*I: So has there been any changes made in light of the results?*

*P: For results, no we are fine. No, nothing. Because we have everything in place. Everyone is quite open and they know they can approach me, they can approach ....  
(Pharmacist, Health Board 2)*

In the later feedback (CE, 2016) some participants described how the results were improving some processes/activities including: error and near miss-reporting; a stimulus to look at workflow; and supporting more open feedback on systems and procedures by all members of the team:

*“Maybe just around the SOPs and stuff. Before, it was very much “oh the pharmacist creates that”, rather than other members of staff being like “oh well actually, I’ve read this SOP and actually that’s not how we do things anymore”, so, there was input from every member of staff, rather than just from top down.”  
(Pharmacist, Health Board 4)*

*“One of the things that was changed was where I check. I was in the way was essentially the problem, so my checking bench was beside where our fast moving lines were, so the staff were continually trying to get round me...the girls had suggested changing it so I said, “well you move me to where you want me to be and we’ll review it and see how it works”, and they moved me and all my kit and caboodle for checking to another bit of the dispensary and it’s still there to this day ... it absolutely was the right thing to do.”  
(Pharmacist, Health Board 4)*

*“We definitely give a lot more feedback now ...I think everyone feels like they can say things now about it and they know I want feedback if they think things are going wrong rather than them just sort of plodding on thinking...So it’s definitely better in that sense [and we’re all kinda more aware of that now.”  
(Pharmacist Owner, Health Board 1)*

At the CE (QA5a, 2016), Away Team participant were asked to score to what extent they agreed that the Safety Culture tool had improved their pharmacy’s systems and procedures. The median Likert scale response was 5 (“Slightly Agree”), showing some agreement that the tool had penetrated their working practices and was facilitating the realisation of improved safety culture.

***Conclusions: There are some examples evolving of how the tool is starting to generate changes in practice within the individual sites but there may be useful learning to be shared more broadly to support wider institutionalisation.***

## **Sustainability**

*Sustainability: The extent to which a newly implemented treatment is maintained or institutionalized within a service setting’s ongoing, stable operations.*

Sustainability is concerned with the maintenance of the intervention over time. Although the use of the questionnaire is in its relative infancy, two themes emerged relating to the early engagement with the activity and shaping of routine systems development over time.

#### *Emotional Appraisal of Tool*

The tool being perceived as useful seemed to be linked to an intention to reuse the tool. Equally however, having completed the tool once seems to have increased confidence in the process, perhaps due to allaying any negative perceptions of the tool (highlighted under Acceptability):

*“We will obviously continue and be participants this year because what you don’t want to find is that you slip”.*

*(Pharmacist Branch Manager, Health Board 2)*

*“Yes, so we just heard about [name] doing her safety huddles. Emm, I think, probably, I think we did it very quickly and kind of almost like a tick box exercise. I think probably the next time we should try and treat it a bit more respect, maybe be a bit more pro-active and not just see it as something we have to do. But actually it is going to be, you know, really useful.”*

*(Pharmacist, Health Board 4)*

#### *Fit With Routine/Evolving Practice*

From the Celebratory Event some participants described how they were starting to use the data more routinely within their practice and driving potential sustainable improvements: one practice had improved their error reporting approach and had ambition to move to an electronic system; another was integrating the output from the survey into their regular safer care meetings with wider team contribution:

*“Well I think in terms of the way we record errors now is a lot better and we weren’t doing that so well before so that’s probably been the big change ..... we’re hoping to go electronic actually as well but at the minute there’s just like a sheet under the fridge and everyone just kind of writes their mistake on there.... Once a month we just kind of try to look at that and see if we can you know find any common themes or any things that people can find”*

*(Pharmacy Owner, Health Board 1)*

*“We do as part of our head office kind of SOPs we do a safe care checklist every week and we have a safer care meeting at least once a month. And I think the health care assistant thought it wasn’t part of their, but after we had the discussion about the safer care and the survey and we tied it all in with our branches safer care meetings they realised it was part of, they were part of it too.”*

*(Pharmacist Branch Manager, Health Board)*

The data generated from all participating sites, presented by factor (working conditions, communication, leadership, teamwork, safety systems and learning) over the two time periods is presented in Figure 45. There is an observed small reduction in the median level of agreement for all

factors except safety systems and learning that is slightly increased. The application of the survey is still relatively new in the sites, especially in an environment which reports frequent staff turnover/ changes, which may in part reflect minimal movement in measurement to date.

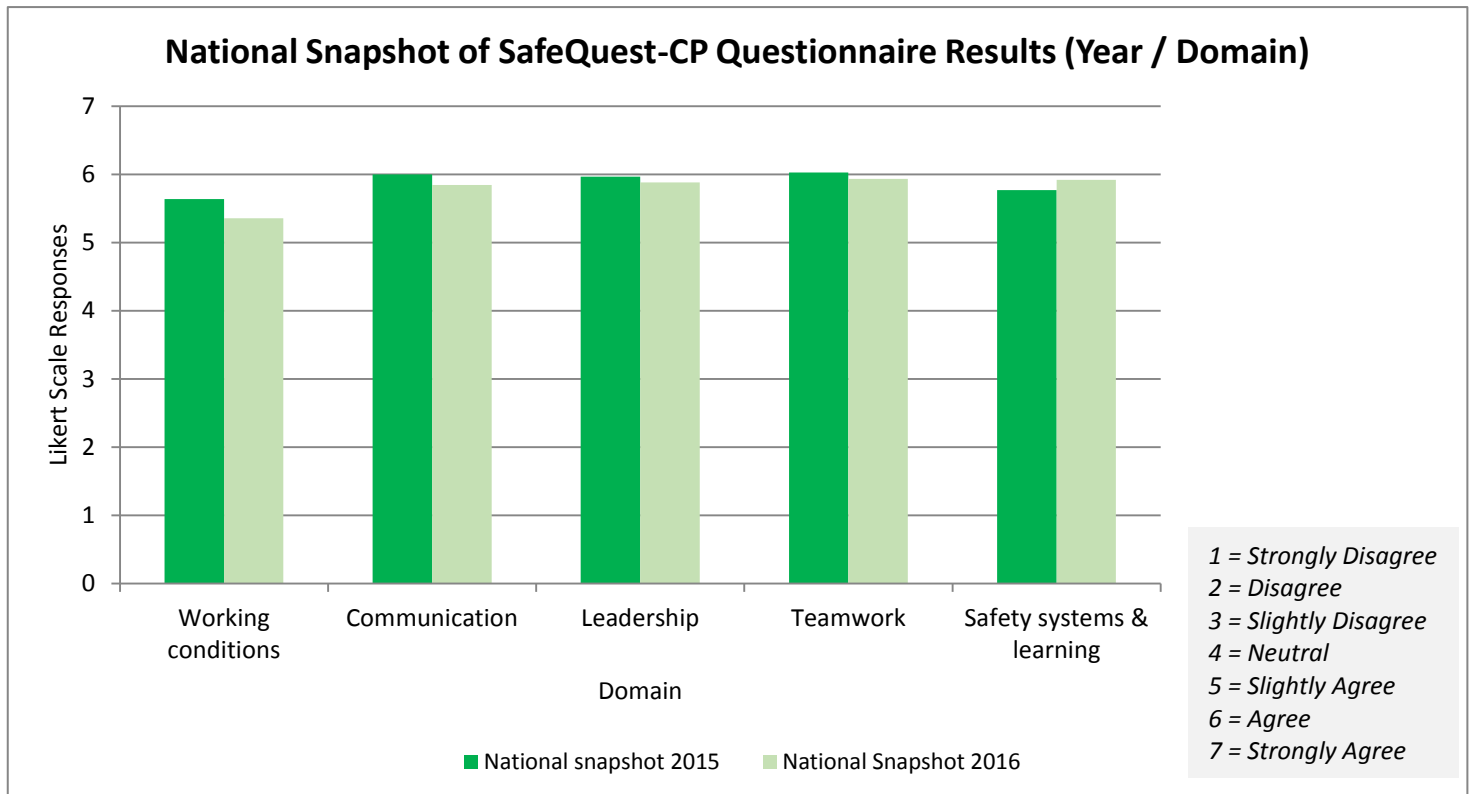


Figure 45: National Snapshot of SafeQuest-CP Questionnaire Results

However, in QA5a (2016) when participants were asked to what extent they agreed they would continue to use the SafeQuest-CP questionnaire beyond the lifespan of the SPSP-PPC collaborative, the median Likert scale response was 6 (“Agree”) showing a good motivation to sustain the use and impact of the tool.

**Conclusions: Engaging in using the tool was thought in some sites as a motivator for further use of the survey tool and there is evidence of a wish to continue to use the survey moving forward. There are also early signs of some sites changing practice and trying to integrate changes into current and evolving systems and procedures but this is still in its infancy.**

## Client Outcomes

At this stage of deployment within the program it was considered that examination of service/clinical outcomes was premature.

## FUTURE DIRECTIONS

The strategic intent of the SPSP-PPC collaborative is to inform a national implementation programme across all community pharmacies (approx. 1250) and dispensing doctor practices in NHS Scotland. To facilitate the national implementation of the SPSP-PPC change packages, the Evaluation Team sought to identify a suitable framework for guidance. A number of framework pre-requisites were specified and a literature search undertaken which identified around 50 implementation Frameworks designed for health services (32, 37, 41). Analysis of these frameworks against pre-specified criteria identified the IHI framework 'Going to Full Scale' as suitable for the SPSP-PPC collaborative (37). The framework aims to address the challenges of scaling up new healthcare interventions by offering practical guidance. It incorporates guidance on three components;

- Four sequential stages of scale-up – (1) the set up phase, (2) developing the scalable unit, (3) test of scale up and (4) going to full scale.
- Adoption mechanisms - which can be described as contextual and environmental factors which can affect the implementation process
- Support Systems – which offers understanding of the supportive infrastructure optimal to scaling up healthcare interventions.

This section of the report pulls together the key lessons drawn from the analysis of results paying attention to the components defined in the IHI framework, where appropriate, and any current or planned action to support spread of the SPSP-PPC collaborative across NHS Scotland.

### Collaborative Learning Approach Delivering Change Packages

#### Key lessons

There is significant learning from the evaluation to help inform how to effectively introduce the Model for Improvement (MI) and the underpinning knowledge and skills necessary to support effective and efficient delivery of the change packages into community pharmacy/dispensing doctor practices in moving forward. Key lessons to consider:

- **Bringing together participating site leads (Away Team members) across the organisation generated a positive reaction, and provided a networking opportunity and motivation to be engaged with the SPSP-PPC collaborative**
- **The collaborative approach delivered was rated positively by Away Team members with regards to the recognised factors of success: expert lead support; collaborative processes; teamwork; organisational support**
- Elements of the QI approach including the PDSA cycle documentation process was in some sites challenging to maintain routinely in practice
- Baseline knowledge, understanding and use of the QI approach and tools was initially low but rose rapidly through the model of training provision delivered to Away Teams however had less impact on Home Teams
- **Involvement of the wider site staff will be important in moving to a sustainable model, and further consideration of their learning needs and how best to raise awareness of, and deliver training on, the QI approach and change package programmes requires attention.**

As a direct result of the work of the SPSP-PPC collaborative the Scottish Government have chosen to include the Quality Improvement Approach as part of a new NHS Circular – PCA(P)(2016) entitled “*Pharmaceutical Services Supporting Continuous Improvement and Closer Partnership Working*”, issued September 2016 (42). The ambition is to have continuous improvement as an ongoing element within the community pharmacy funding settlement moving forward, through introducing an incremental approach of building capacity in improvement methodology and practice whilst supporting the development of a strong patient safety culture. All community pharmacy contractors in NHS Scotland (approximately 1250) will receive a Single Improvement Payment in financial year 2016/2017 for undertaking three activities as detailed in Figure 46.

#### Activity A: Understanding Improvement

- *Completion of six foundation level modules, each one of which takes one hour. They provide a basic introduction to the widely used improvement methodology):*
  - Introduction to our purpose and values
  - Introduction to quality and quality improvement
  - Introduction to healthcare systems
  - Introduction to quality improvement methods
  - Lean in healthcare
  - Knowledge into practice in healthcare

#### Activity B: Building a Safer Culture- space, time & context

- *Completion of two practitioner level modules, each of which takes one hour, and encouraged to create space and time for reflective practice and peer discussion in relation to continuous improvement. This should include reflection on the Safety Climate Survey):*
  - Creativity and innovation in healthcare
  - Evaluating quality improvement

#### Activity C: Undertaking the Pharmacy Safety Climate Survey

- *Completion of this activity by 30<sup>th</sup> September 2017 followed by discussion of the results in an open and supportive way, and should use the findings to identify areas for improvement.*

Figure 46: Deliverables Defined Within NHS Circular PCA(P)(2016) 15

Activity A within the circular takes forward a modified approach to that delivered through the SPSP-PPC collaborative. This approach builds upon the NHS Scotland Improvement Hub which includes multiple online learning resources (43). The pharmacy contractor and all employed pharmacists are being required to complete the identified modules as an initial step to building knowledge and skills in quality improvement approaches in practice sites. These activities will be supported by introducing the established Health Board Community Pharmacy Facilitator appointments to the quality improvement approach through nationally coordinated “training the trainers” events, supported through a second, NHS circular (44).

### Key lessons

There is significant learning from the evaluation to help inform further development of the care bundles, both in respect to content and implementation. Key lessons to consider:

- Away Team acceptability of the HRM intervention was low at baseline due to a lack of understanding yet over time improved and was maintained through local contextualised solutions to implementation. Delivering the care bundle itself was seen as feasible.
- **Delivering the care bundle was feasible. Some sites developed their own tools to support integration into established systems and procedures. Home Team awareness and understanding was variable, much stronger for Away Team participants, and this impacted on whom in the practice team was delivering the care bundle to patients, often the onus lying with the Pharmacist.**
- Confidence levels in the use of QI tools was varied: Care Bundles (high), PDSA Cycles and Run Charts (low).
- The HRM element was seen as appropriate for community pharmacy/dispensing practices, in relation to provision of safe and reliable patient care. Better alignment with other national services was proposed in moving forward.
- **The HRM element was seen as fitting well with pre-existing work activities (aside from data collection and reporting); delivery remains ongoing in the practice sites (approaching two years) with a strong willingness from staff to continue.**
- **Feedback on patient satisfaction flagged that application of the HRM Care Bundle on a regular basis maybe laborious for some patients; but patients appreciated the communication channel the HRM element offered to extend engagement with the practice team.**

In the context of High Risk Medicines care bundles there has been agreement that the next logical step from the care bundle testing within the SPSP-PPC collaborative is to develop the 'scalable unit' prior to larger scale roll out as defined within the IHI framework 'Going to Full Scale' (37). This is currently involving two components:

- Developing a consolidated Care Bundles through a Consensus Workshop.
- Developing a Generic High Risk Medicine Care Bundle Process Map to facilitate the next phases of scale-up.

#### *Consensus Workshop*

Within the pilot phase, there were two different Warfarin Care Bundles and two different NSAID Care Bundles operationalised. At various Steering Group meetings towards the end of the programme a desire to develop and further test consolidated care bundles was expressed. The overall aim was to consolidate the existing care bundles into a single NSAID Care Bundle, a single Warfarin Care Bundle, each with agreed patient cohorts and data collection and measurement plans.

The Nominal Group Technique (NGT) was selected as an appropriate method; it is a structured approach to decision-making and consensus generating (45). It involves group interaction, discussion

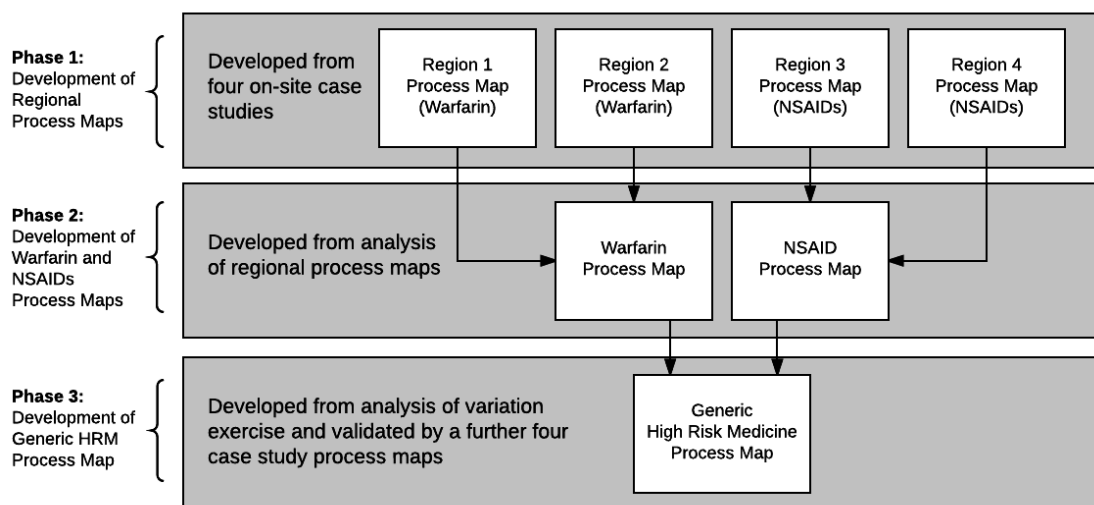
and the attainment of consensus, and it allows for everybody’s input equally - preventing individuals overpowering the discussion. The process was believed to facilitate continued stakeholder engagement and ownership of the final outcome.

The NGT participants have been purposefully selected based on their involvement in the programme, and primarily include the SPSP-PPC Steering Group. This event is scheduled to run in November 2017, led by the evaluation team.

### *Generic Process Map*

A known barrier to implementation is the lack of compatibility of new interventions with routine practice (46-48). Furthermore, in documented community pharmacy quality initiatives, integration into practice has been identified as one of six supporting factors (49). In light of this evidence and recognizing the need to pay attention to the IHI adoption mechanisms and support system factors we have taken the opportunity to focus on understanding how the pilot pharmacies integrated the care bundles into routine practice to inform the development of a generic process map which may facilitate larger scale roll out as part of a resource toolkit for deployment. The emphasis here was not on refinement of the process per se, but to develop an understanding from the pilot phase and use this learning to facilitate next steps.

Through a three phased, qualitative case-study methodology (50), depicted in Figure 47 generic process map was developed.



**Figure 47: Overview of Generic Process Map Development**

Through the exploration of variation, five core steps fundamental to successful care bundle delivery were identified: (1) identifying eligible patients, (2) clinical assessment, (3) highlighting patients’ eligibility, (4) delivering the care bundle to the patients including non-attending patients, and (5) documentation. In addition, the process of integrating these five steps into routine practice was also identified, shown in Figure 48. The suitability for a whole team approach was also highlighted, as only the clinical assessment step required pharmacist’s involvement.



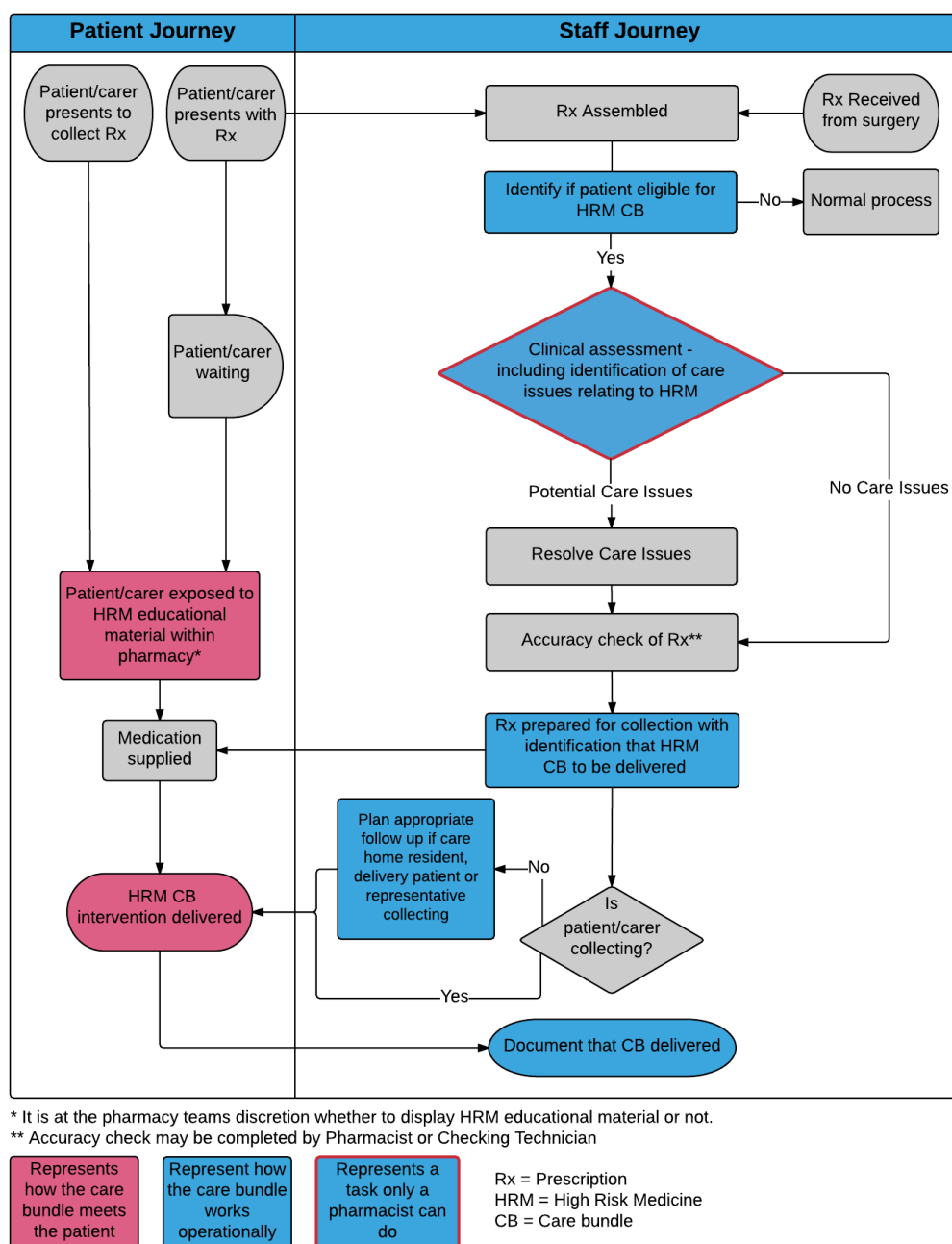


Figure 48: Generic Process Map Detailing Integration of Care Bundle into Routine Practice

It has been agreed within the circular NHS PCA(P)(2016) 15 the programme sites will continue to test the new consensus care bundles from January to March 2017 (42). This planned approach should enable the following to be achieved over the next few months: the consolidated care bundles to be further tested in a different setting (Health Boards who developed the original Warfarin Care Bundle to test the new consensus NSAID Care Bundle and vice versa) before proceeding to full scale roll out; single consolidated care bundles will offer equality of patient care to all eligible patients, and facilitates evaluation of service and clinical outcome measures moving forward; identification of the core stages in delivery of the care bundle (generic process map testing) allows for targeted development of

resources for national implementation and may facilitate whole team engagement; and, testing the concept of developing a generic process map for different HRM areas, may inform adaptability of the process to future clinical contexts.

## SafeQuest-CP Questionnaire

### Key Lessons

The patient safety survey tool has now been applied up to twice in the study sites within the SPSP-PPC program and there is significant learning from the evaluation undertaken to date to shape how this tool could be taken to spread across NHS Scotland community pharmacy and dispensing doctor sites. Key lessons to consider:

- **Assurance of anonymity of individuals completing the tool is important, and was especially a concern for small sites**
- The underlying safety culture environment within the setting is crucial to success
- Awareness of the tool and the potential for integration with established systems and procedures considering patient safety would facilitate sustained spread
- **The time and resources necessary to apply the tool and discuss the outputs need to be acknowledged;** there should be recognition that feedback can take multiple forms depending on the setting
- **The opportunity to share/benefit from the learning generated by the SPSP-PPC collaborative pilot sites (potentially acting as Champions) to new sites should be maximised.**

As outlined in Figure 46, the use of the SafeQuest-CP questionnaire will be progressed through the NHS Circular PCA(P)(2016) 15 (42). This will involve all community pharmacies in Scotland (approximately 1250) completing the SafeQuest-CP questionnaire by 30<sup>th</sup> September 2017 and following this up with a discussion of the results within the pharmacy team to identify areas for improvement. The SPSP-PPC team have produced a series of resources to introduce pharmacy teams to the SafeQuest-CP questionnaire including a video and written guide (51). These are based on the evidence generated through the SPSP-PPC collaborative and include an important focus on how to manage feedback and discussion of results, as this was identified as a key challenge. The resource includes advice on how to organise meetings and provides templates on how to work through the culture domains with the team and prepare an action plan as a focus for improvement.

Given the scale of the spread, from 27 to approximately 1250 sites, it will be important to monitor the level of update and engagement with the activity to inform future direction and measure the impact on safety culture within these primary care settings. A number of elements could be considered: uptake and participation rates, available through the electronic system; sampling/survey of new sites using the evaluation tools within the program to capture further lessons on implementation approaches for sustained engagement and explore service and client outcomes arising from delivery of the anticipated action plans generated by sites over time.

## Medicines Reconciliation Care Bundle

### Key lessons

The SPSP-PPC collaborative provides some early insights from the evaluation to guide further development and implementation of a Medicines Reconciliation change package into community pharmacy/dispensing practices moving forward. Key lessons to consider:

- Understanding of Medicines Reconciliation improved amongst Away Team members over time and was seen as important, appropriate and acceptable.
- **The major challenge to feasibility was access to the IDL (Immediate Discharge Letter), which when resolved enabled delivery of the care bundle in practices.**
- **Medicines Reconciliation sustainability is dependent upon a number of factors: definition of the patient cohort; timely and reliable access to IDLs; and appropriate staff involvement**
- The Medicines Reconciliation Care Bundle was delivered across all four Health Boards but the patient cohort to whom it was applied varied.
- The Medicines Reconciliation process and care bundle was satisfactory to patients, and seemed particularly beneficial for those patients who are hard to reach, and facilitated an open communication channel between the patient, the pharmacy and secondary care providers.

The NHS Circular PCA(P)(2016) 15 also provides opportunity for the current study sites to continue testing of the Medicines Reconciliation Care Bundle (42). Discussions are ongoing to consider how best to progress the development of this change package.

## CONCLUSION

The SPSP-PPC collaborative has been an ambitious 2yr programme positioned to *“improve patient safety by strengthening the contribution of community pharmacy and improving communications within the primary care team”*. The programme has sought to achieve this through the formation of a collaborative and use of established improvement tools and approaches focused on three change packages: High Risk Medicines, Safety Culture and Medicines Reconciliation.

Delivery of the programme across multiple sites with differing geographies (urban/rural), health systems (four distinct localised health care systems) and practice environments (small/medium/large chain and independent community pharmacies, plus dispensing practices) has provided the opportunity to test both the approach and the delivery of the change packages. The consequences of this diversity have been threefold: firstly, the opportunity to collect, collate and analyse an extensive data repository generated through the applied mixed methods evaluation approach over the programme duration; secondly, variable response to the level of uptake and use of the three change packages with observed adaptation in the local practice setting to some extent; and thirdly, to generate insight into the potential key adoption mechanisms and support systems that are known to be crucial in moving to a successful full scale rollout.

The evaluation approach, integrated within the programme development and review process, has afforded the opportunity to provide continuous feedback of learning gained to the SPSP-PPC Steering Group. This report consolidates the evidence generated and summarises key lessons for consideration in progressing this important patient safety programme.

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Funded by and produced for the Health Foundation

Led by:

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