Pilot and scoping for the creation of an innovative rotational, cross sector, pharmacy technician workforce within Medway and Swale

Medway NHS Foundation Trust Workforce Transformation Project in partnership with Medway South PCN

Sponsored and supported by Health Education England: London and Kent, Surrey, and Sussex

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CONTENTS

GLOSSARY OF TERMS

8X8	Hospital communication system
AccuRx	Integrated messaging software used by the PCN to communicate with patients
CCG	Clinical Commissioning Group
DartOCM	Blood test ordering system
DOCMAN	Docman 10 - cloud based software platform used by the PCN to manage clinical correspondence
EDN	Electronic Discharge Notification – Hospital software used to create and send patient discharge summaries
EMIS	EMIS Web - clinical patient record system used by the PCN
EPMA	Electronic Prescribing and Medicines Administration – Impending hospital software to replace EDN
EPR	Electronic Patient Record – Sunrise – Hospital software used to view patient observations and admission notes
EXTRAMED	Hospital patient flow software used for tracking patients and recording inpatient observations
ICP	Integrated Care Partnership
iLAB	Blood test result database for North Kent Pathology Services
ILR	Integrated Locality Review
JAC	Hospital pharmacy medicines dispensing software
MFT	Medway NHS Foundation Trust
PCN	Primary Care Network
PharmOutcomes	Web-based system for sharing prescriptions between hospital and community pharmacies
Scriptswitch	PCN software to aid cost-effective formulary prescribing

ABSTRACT

It is part of the NHS long-term plan to better support joined-up care at the right time and in the optimal setting (NHS England, 2019). Medway NHS Foundation Trust (MFT) developed a cross-sector/interface pharmacy technician role to demonstrate support for sustainable workforce transformation, innovative practice, and the vision for integrated patient care across Medway and Swale ICP in a 9-month pilot at Medway South PCN.

The pilot showed evidence for improved patient outcomes post transfer of care resulting from faster, enhanced medicines reconciliation and follow up interventions for selected high-risk patients. This addressed adverse medication issues that were observed following hospital discharge such as non-compliance and counselling requirements.

Benefits of cross-sector working included: improved networking, communication, and peer support; improved governance and risk management; greater understanding of problems with processes and medicines management systems across the interface; and understanding of discharge issues faced by PCN teams.

Shared learning highlighted improvement opportunities for both PCN and hospital staff and systems. This included guidance and recommendations for better recording of important medication information required for ongoing patient treatment and improving quality issues with discharge prescription letters (EDNs) and discharge counselling.

TEAM

The project was outlined by the MFT Lead Pharmacist for Frailty and Elderly Medicine and Lead Clinical Pharmacy Technician. The accountable senior lead was the Chief Pharmacist. The project pilot role was performed by a MFT Senior Pharmacy Technician. Additional support came from project board members consisting of the Medway South PCN clinical director, Kent and Medway CCG Lead Medicines Optimisation Pharmacist, Kent and Medway CCG Lead Integration Pharmacist, PCN Clinical Pharmacists, ILR Interface Pharmacist, and the MFT Pharmacy Operations Manager.

BACKGROUND

The Medway and Swale ICP vision for joined-up care is to improve the ease of referral and increase the understanding of systems across the interface. This has already commenced with Medway NHS Foundation Trust (MFT) hosting PCN pharmacist positions. Currently the pharmacists are directly working within their respective PCN's and are not rotational. This project's scoping for rotational or interface posts is the next step in integrated system benefits realisation and learning.

Local PCNs now employ PCN Pharmacy Technicians under the Additional Roles Reimbursement Scheme (ARRS). This represents an increased number of jobs available to pharmacy technicians from a limited workforce.

The hospital is traditionally the primary trainer of clinical pharmacy technicians and a new rotational role would allow new and current staff to gain experience across the interface and retain skilled workers within the ICP. Growth of these roles will allow for career progression, more opportunity for collaborative working, and increase sustainability of the workforce across our health services.

The World Health Organisation (WHO, 2017) recognises transfer of care as priority of focus in the 'Global Patient Safety Challenge: Medication without Harm' initiative to reduce the level of severe, avoidable harm related to medicines. MFT have recently launched the Transfer of Care Around Medicines (TCAM) system, utilising an embedded, simplified PharmOutcomes platform, to provide community pharmacists with the information required to safely continue or discontinue medications from hospital admission. A cross sector pharmacy technician will provide a further link between the community pharmacy, GP practice, and hospital to ensure timely update of prescriptions, prevent outdated medication supply and administration, and follow up to ensure understanding of a new regimen.

It is part of the NHS Long-Term plan to better support joined-up care at the right time in the optimal setting (NHS England, 2019). Furthermore, it is recommended that investment in person-centred pharmaceutical care following hospital admission (i.e. that meets individual need for information, supports in medicine provision, and increases responsibility for self-care) will contribute to reducing the rate of emergency readmissions caused by non-adherence or side effects. This necessitates joining up pharmacy services across sectors (Barnett and Blagburn, 2016).

AIMS AND OBJECTIVES

The aim of this project is to provide an evidence base for an innovative way of working across the interface. This will demonstrate the benefits to the system and to patients of training and developing pharmacy technicians with experience of both primary and secondary care. The evidence base can be used to implement a new way of working that is attractive for pharmacy technicians, and improves patient outcomes as they transition across the interface.

The vision of the project is to successfully put forward a business case for the implementation of a substantive rotational cross-interface service, between the PCN's and MFT initially, but with scope to expand into other areas including mental health and community services in Medway and Swale. This role may sit as part of an expanding integrated pharmacy team. The learning will assist with the development and highlight the training, provision, and support required for a sustainable role.

This pilot aims to demonstrate improved continuity of care for patients, whilst giving insight to identify risks and gaps in service provision that can be reduced. Scoping can produce a rapid assessment of available benefits of how a pharmacy technician can be used collaboratively, identify key work streams for a future role, and demonstrate how to achieve effective patient follow up across the interface.

The role aims to demonstrate input and add value to a range of medicines management activities focused around review of discharge prescriptions (EDNs) and outpatient letters including:

- Medicines reconciliation
- Counselling
- Update and review of prescription lists
- Support of ongoing medicines monitoring tasks
- Appropriate escalation and referral of any unresolved issues

As a result, the overall quality of patient-based care is expected to improve, directly relating to patient outcomes and empowering patients in their own management.

The key focus of evidence gathering in the scope of the project is to:

- Identify areas for improvement to transfer of care and related medicines safety.
- Identify areas for improvement to medicines reconciliation within the PCN.
- Demonstrate improved networks, peer support, and communication across the interface.
- Give greater understanding of medicines management processes across the interface.
- Give greater understanding of patient discharge issues faced by PCN teams.
- Identify areas where actions regarding patient's medication and follow up is at risk of being missed.
- Develop, measure, and monitor Key Performance Indicators (KPIs).
- Work to reduce readmission for preventable medication adverse events.
- Aid reduced wastage of medications following discharge.
- Demonstrate shared learning across the interface to support transfer of care.

The additional duties and responsibilities of the role are:

- To work alongside GP practice teams and other stakeholders within the community to identify the most impactful interventions that can be achieved.
- Work with the PCN multi-disciplinary team to ensure efficient medicines optimisation.
- Pro-actively help patients stay safe and well and out of hospital as well as helping to reduce the demands on PCN.
- To focus on priority/high risk groups of patients including the frail elderly and patients with additional support needs or who cannot advocate for themselves.
- Undertake patient facing and patient supporting roles to ensure effective medicines use, through shared decision-making conversations with patients.
- Carry out medicines optimisation tasks including effective medicine administration (e.g. checking inhaler technique), supporting medication reviews where required, utilise consultation skills to work in partnership with patients to ensure they use their medicines effectively.
- Support the Clinical Pharmacists in Structured Medication Reviews (SMR).
- To work alongside PCN Pharmacists to support medicines management issues and to escalate issues outside limitations.
- Implement and rollout patient satisfaction feedback to support the implementation of new and existing services to support the integration of clinical pharmacy within the PCN.
- Provide expertise to address both the public health and social care needs of patients, including lifestyle advice, service information, and help in tackling local health inequalities.
- Support practice reception teams in streaming general prescription requests, so as to allow GPs and clinical pharmacists to review the more clinically complex requests.
- Lead on improvements to maximise safe, cost effective best practice in prescribing to improve the quality of patient care.
- To develop and undertake medicines management audits, to support the benefits of the Clinical Pharmacy Technician role within a PCN environment.
- Promote safe use of medication, reporting of medicines related incidents and pro-actively preventing safeguarding incidents.
- Review and support the training to existing prescription teams working within the PCN to ensure the safe review of medicines.
- Support and manage same day medication queries.
- Support the use of transfer of care around medicines (TCAM) to further strengthen the links between community pharmacies, hospitals and the PCN.
- Assist and support medication safety within the PCN, to include running reports, completing audits, looking at medication safety issues such as those identified by MHRA, and supporting implementation of change to address any issues identified.
- Facilitate team working and collaborations within teams/department and across organisational boundaries.

STANDARDS

A range of Key Performance Indicators (KPIs) were developed at the start of the project by the project board and adjusted during the introductory phase. This was so that both quantitative and qualitative data could be collected to form the evidence base to meet the project aims.

Key Performance Indicators

1. **Number of medicines reconciliations completed following hospital discharge to PCN**

    - Later updated to include time taken to reconcile at one PCN surgery

To gain indication of the typical workload that could be met and to compare against the number of interventions made.

2. **Number of medicines reconciliations completed compared to the total number of discharges to the PCN**

For the purpose of aligning the workload the role can achieve against the workload of the PCN.

3. **Total number of interventions split into:**

- **Discharge** - Resulting from post discharge medicines reconciliation
- **Counselling** - Follow up interventions involving consultation with the patient
- **General** - To include any interventions made not following hospital discharge reconciliation e.g. ad hoc queries and clinic letters

To gain indication of the quantity of interventions achievable. Short descriptions of all interventions were also recorded in order to give insight into the services provided.

4. Use of hospital software

This is to measure how knowledge of, and access to, secondary care IT systems can benefit ongoing patient care in the PCN.

5. Structured Medication Review (SMR) support

This is to record how the role could support identification of patients in need of SMR and aid PCN Pharmacists in the preparation and follow up of these patients.

6. Case Studies of Interventions

To record specific examples of how interventions demonstrate: Improved reconciliation, improved patient safety, issues with transfer of care, benefits of cross-sector working, hospital readmission avoidance, reduced demand on PCN clinicians, medication waste reduction, and better patient outcomes.

Other benefits of role

The wide scope of the project required the need to record and share additional observations and benefits of the role, some of which, unknown at conception. This also would be linked to the aims and objectives of the project.

METHODOLOGY

A senior medicines management pharmacy technician was seconded into the project role for 9 months. The rationale of the appointment was that existing experience and knowledge of inpatient procedures, practices, and software used in hospital would add significant value to the interventions made for patients on transfer of care and share learning across the interface.

The project was planned to include: 1 month of scoping and introduction, 6 months working within the PCN identifying and demonstrating the benefits of the role and 2 months to analyse and evaluate the findings.

Scoping and Introduction Phase

The pharmacy technician was introduced into the Medway South PCN practices with support of established MFT PCN Pharmacists. The largest GP practice was used as a base and more practices were involved as the pilot progressed.

Induction consisted of shadowing Prescription Teams, Practice Pharmacists, and PCN Pharmacists with support from other clinical and non-clinical PCN staff.
Individual access to IT systems was arranged within the practices and MFT as required.

IT software access used throughout:

GP: *EMIS, DOCMAN, DartOCM*
Hospital: *EDN, JAC, iLAB, 8x8 telephone system, physical patient notes, and inpatient observations records (EXTRAMED and EPR)*

To promote awareness of the role, initial introductions were face to face at practices and contact details shared. Further awareness was later introduced throughout the PCN using a communication poster (Appendix 1) with specific referral criteria and contact information. PCN staff were able to then access the pharmacy technician for ad hoc patient referral and queries.

At the first GP practices it was observed that each practice had its own individual version of EDN workflow through DOCMAN and into the task lists of practice staff needing to perform an action/review.

In response, the workflow process was mapped at each practice to determine the timeline and opportunities where the pharmacy technician could integrate into the existing process. Case by case access was then organised to be able to view and action EDNs in DOCMAN at the point that the prescription team or equivalent staff member had received.

Initially all EDNs in this task list were selected for reconciliation and intervention but it was practical to later restrict the selection by using a set criteria (see KPI number 1).

During this phase of the project it was also evident that, in some practices, reconciliation and review of transfer of care documents was taking a significant period of time due to high workload. These DOCMAN task lists became the main work stream for the project and formed the vast majority of data collection.

Established data collection phase

Once established a typical procedure was followed during the main work stream of accessing transfer of care letters from the DOCMAN task lists. This yielded the majority of data for KPIs 1, 3, 4, and 6.

Project transfer of care document review process:

1. Select EDN/clinic letter from DOCMAN task list (see **criteria** for KPI number 1)
2. Reconcile medications against EMIS
3. Update medication list on EMIS
    a. Link medications to problems/diagnoses
    b. Record additional medication information
4. Add medication monitoring information to EMIS (if available)
5. Contact patient for counselling (if appropriate)
6. Request issue of medication (if needed)
7. Forward document/refer for ongoing clinical input (if appropriate)

Ad hoc queries recorded came from a mix of all PCN staff and were received through a range of communication methods including: face to face, phone call, and email.

Throughout the project, workspace, workload, and time restraint became a major barrier to integrating into and sharing work time equally between the PCN surgeries. Remote working was avoided where possible however was necessary during late stages of data collection. Overall three practice groups had substantial input from the role with onsite presence from the pharmacy technician. Another three were visited and informed of how to refer to the service for ad hoc referral and queries. One group of practices did not receive engagement due to time restraint.

Key Performance Indicators

1. Number of medicines reconciliations completed following hospital discharge to PCN

High demand to reconcile and review transfer of care documents seen in the scoping phase made it necessary to reconsider how work towards this KPI would be managed.

The documents selected for action were refined by the following **criteria** to manage workload and maximise the opportunities for impactful subsequent interventions to be made:

- Those with 3+ medication changes or changes to high risk medications
- Those whose new/changed medication required follow-up i.e. Blood monitoring, symptom/blood pressure follow up
- Those with new/changed medicines in varying/changing doses, either increasing or decreasing over a period of time
- Those concerning patients highlighted as vulnerable / confused / housebound / adherence issues and likely to struggle following changes to their medications

The number of days passed from discharge notification receipt until medicines reconciliation at one group of GP practices was also recorded to demonstrate the effect the pharmacy technician had on time taken. A target time of 7 days was considered based on National Institute for Health and Care Excellence (NICE) recommendations (NICE, 2015).

2. Number of medicines reconciliations completed compared to the total number of discharges to the PCN

In cooperation with the MFT Business Intelligence team the discharge figures from Medway Hospital to the Medway South PCN were compiled into a live report. Due to issues with the data, only completed EDNs processed by Medway Hospital Pharmacy Department could be used. A good estimation of the outgoing workload could still, however, be determined.

3. Interventions

Any interventions made were recorded on a separate data collection sheet for the project as well as on the GP practice EMIS consultations record and linked to the transfer of care document it referred to if applicable.
An intervention dictionary was compiled at the start of the data analysis phase in order to categorise the types of interventions made.

Intervention Dictionary for Discharge and General Interventions:

A - Changes to GP medication record
B - Coding new diagnoses/allergies
C - Answered Staff query
D - Answered Patient query
E - Rectified prescription error
F - Referred to other Health Care Professional (HCP)
G - Drug monitoring test/information requested
H - Drug monitoring information added to GP record to meet QOF indicators e.g. blood results, weight, creatinine clearance calculation
I - Medication ordered

Intervention Dictionary for Counselling Interventions:

J - Medication regimen change check
K - Advice given on ongoing monitoring/review
L - Advice given on new/changed medication use e.g. administration and titration
M - Advice/follow up on ongoing supply

Discharge

A tally with short description was kept of any interventions made following medicines reconciliation of hospital discharge notification. Descriptions of the intervention were categorised using the interventions dictionary.

Counselling

A tally with short description was kept of any interventions made during telephone follow up consultations with patients. Descriptions of the intervention were categorised using the interventions dictionary.

Consultations were attempted on a case by case basis dependent on the discharge interventions that were required and based on the **criteria** shown in KPI 1.

Patients or their nominated care givers were contacted using the GP practice held contact information. A description of the conversation was entered onto the GP practice EMIS consultation record.

General

A tally with short description was kept of any interventions made that were not related to hospital discharge. This would include any ad hoc queries as well as from viewing patient clinic letters received at the practices. Descriptions of the intervention were categorised using the interventions dictionary.

4. Use of Hospital Software

A tally was kept against a list of the hospital software that could be accessed for use during the project. Short descriptions were also recorded to determine how access was useful for interventions and queries within the PCN.

5. Structured Medication Review (SMR) support

It was initially planned that the role could support the existing PCN Pharmacists with the preparation, follow up, and counselling of patients for SMR. Circumstances meant that involvement was restricted to referring patients when requirements exceeded the capabilities of the pharmacy technician and met criteria outlined by NHS England (NHS England, n.d.). A tally was kept of patients referred for SMR.

6. Case Studies

Certain interventions throughout the project were recorded in more detail in order to gain depth of insight to the service being provided and better inform the benefits of cross sector working.

Themes present in the case studies were mapped to another interventions dictionary once compiled and three cases were selected to give specific examples.

Intervention Dictionary for Case Studies:

A - Prevent/rectify medication related events (missed doses, compliance to regimen)
B - Reduced wastage of medication
C - Pre-emption of prescription/GP query
D - Use of Hospital software to resolve PCN clinician query
E - Referred for ongoing care
F - Counselling following lack of/patient confusion

Additional project data

Patient Survey

Following the mid-point of data collection, an online patient survey (see Appendix 2) was created. This was distributed following counselling intervention with patients via telephone. At the end of conversation the patient was asked for consent to taking part in the survey. If consent was given, AccuRx was used to send the survey internet link to the patient's phone via SMS.

Staff Survey

At the end of data collection an online PCN staff survey (see Appendix 3) was created. An internet link was distributed by email to the staff.

Electronic Discharge Notification (EDN) Audit

During the initial scoping phase of the project a recurring theme of EDN duplication was seen where discharge letters from the same admission were sent to the PCN surgeries multiple times but with updates from various clinicians. Following this, an audit was set up to determine the extent of the issue and give insight into other EDN quality issues raised by PCN staff. These other issues included missing/unclear indications for changed medications and also unclear use of the 'GP to continue' column which is used to indicate continuation status of hospital medications by 'Yes', 'No', or 'Review'.

The audit was completed using a one month sample of EDNs received by one GP practice in the PCN. Accident and Emergency discharge notifications were removed from the sample.

The sample was gathered using DOCMAN and the EDNs were then checked by the following criteria:

- Was another version or duplicate received? If so how many?
- Who created and sent another version/duplicate
- Were there ongoing medication changes?
- Was there a clear indication for ongoing medication changes?
- Was one or more medications displayed as GP to 'Review'? If so was there a clear reason?
- Had the EDN been screened by a hospital Pharmacist?

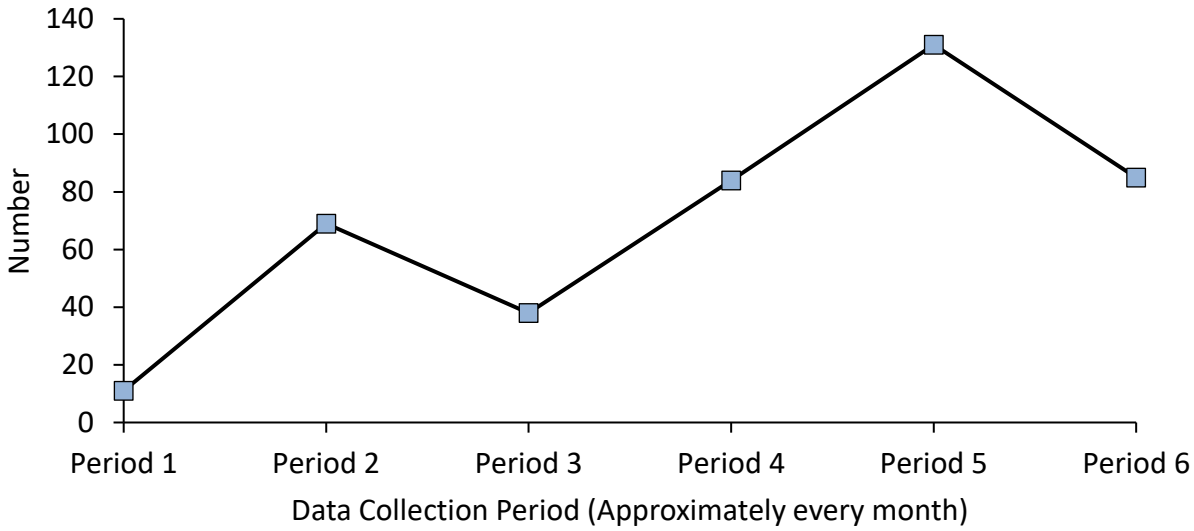
An additional sample using the same method was subsequently collected at a different PCN practice to compare results.

RESULTS

KPI 1 – Number of medicines reconciliations completed following hospital discharge to PCN

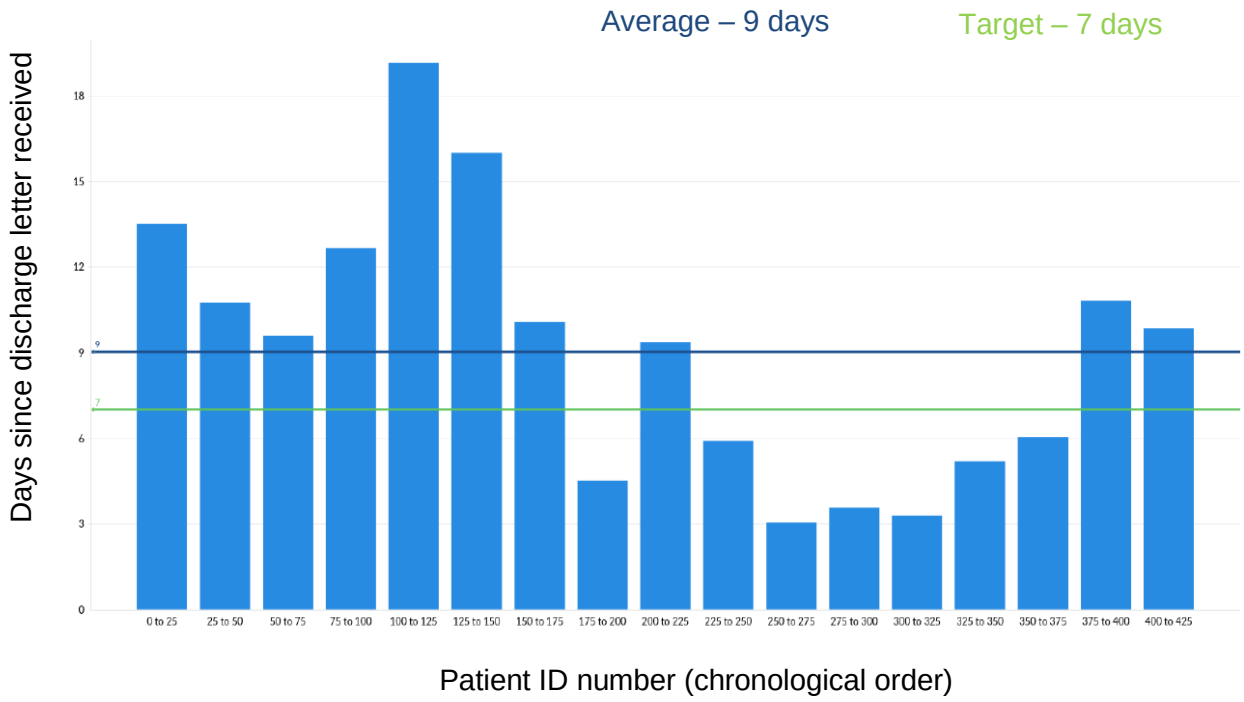
A total of 476 medicines reconciliations from transfer of care documents were completed during project data collection.
407 of these were EDNs from hospital discharge and plotted for analysis to compare against other KPIs of the project.

Figure 1.
Total Medicine Reconciliations completed over project span



The total number of medication reconciliations completed was recorded at approximately the same point each month. Figure 1 shows the amount increased steadily over data collection up to a peak of 131 in period 5. The troughs seen in period 3 and period 6 coincided with the pharmacy technician taking annual leave and temporary redeployment due to Covid-19 pressures.

Figure 2.
Time taken to reconcile medications following hospital discharge over span of project

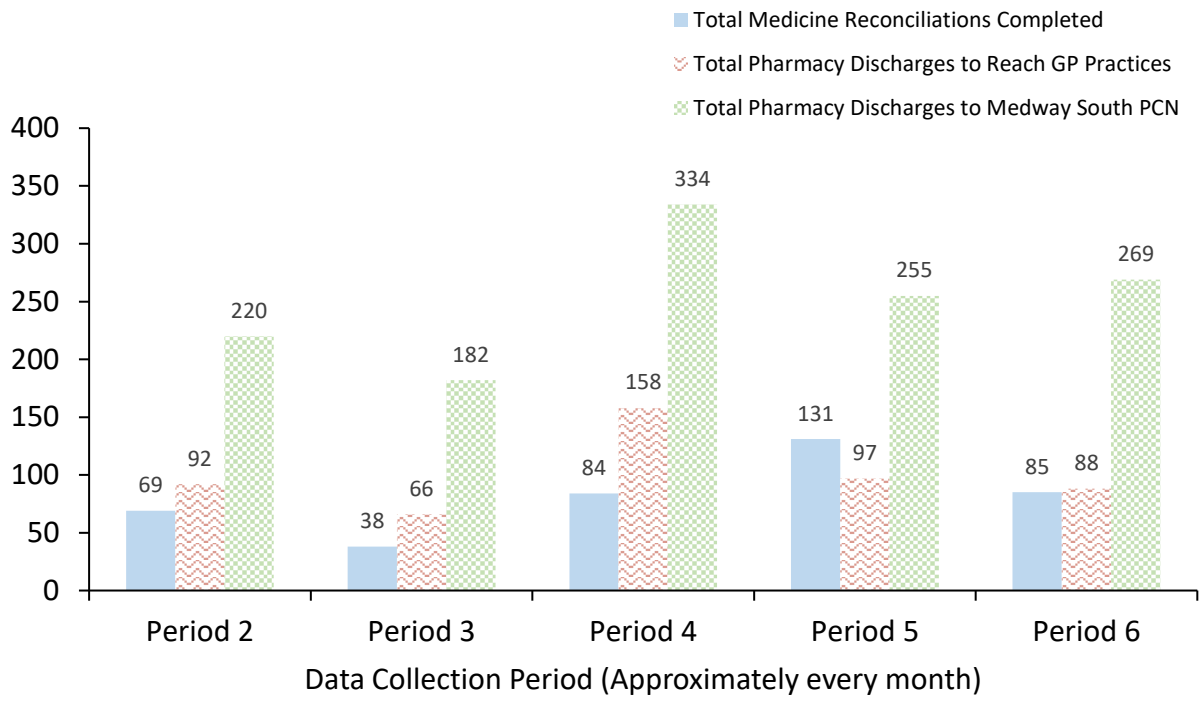


Scoping revealed reconciliation had been taking up to 3 weeks at one PCN surgery so recording time taken to reconcile since the discharge letter was received at this surgery was added to the KPI. No empirical baseline data was collected.

Figure 2 shows over the span of project the time taken initially remained high and well above the target time of 7 days but then reduced significantly to meet the target time through the mid to late stages of data collection. Overall the average time was 9 days however 49% of the total medicines reconciliations completed were within the target time of 7 days. The peaks in time taken (at reconciliation numbers 100 to 150, 200 to 225, and 375 to 407) coincided with annual leave being taken and temporary redeployment of the pharmacy technician.

KPI 2 – Number of medicines reconciliations completed compared to the total number of discharges to the PCN

Figure 3.
Total Medicines Reconciliations completed vs Total MFT Pharmacy EDNs sent to PCN



N.B. This does not include EDNs sent that were NOT validated and processed by MFT pharmacy (e.g. Same Day Emergency Care (SDEC) discharges) so the true number of EDNs received at the PCN practices would be higher.

The Reach GP Practices individual data was added as due to being the largest practice group by patient list represented approximately 40% of the EDN workload at the PCN. The majority of medicines reconciliations completed during the project were recorded at Reach GP practices.

The data available gives an indication that during the overall period of data collection 32% of the MFT pharmacy discharges sent to the PCN were reconciled by the pharmacy technician.

At the peak number of medication reconciliations being completed during period 5 this represented 51% of the total PCN workload shown and exceeded the workload of the Reach GP practices.

KPI 3 - Interventions

Interventions were made for a total of 621 patients during the 6 periods (6-7 months) of data collection. The majority were discharge interventions which followed a medicines reconciliation. Each patient had one or more interventions mapped against the interventions dictionary.

Figure 4.
Number of patients interventions were made for over span of project

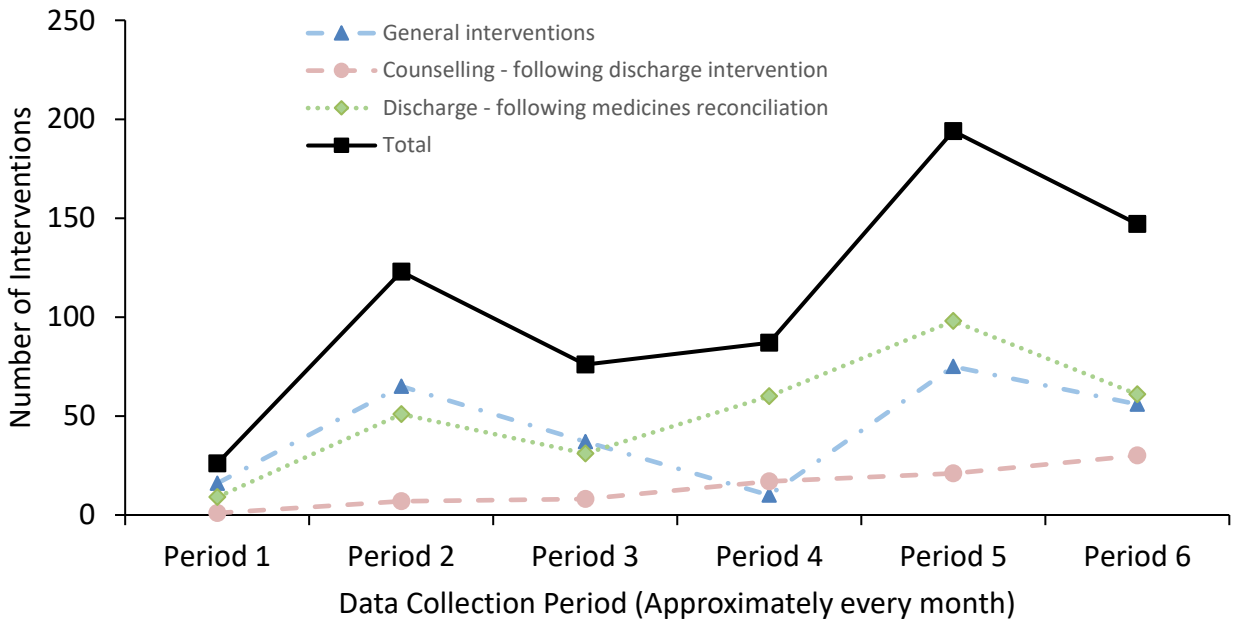


Figure 4 shows a steady increase in discharge interventions over time with a peak of 98 patients in period 5.

Counselling interventions increased over the span of project with a peak of 30 patients receiving one or more medication counselling interventions following 61 discharge interventions in the final data collection period (period 6).

General intervention numbers were relatively stable throughout with an average of 43 patients having interventions in each period.

The troughs in intervention numbers seen in period 3 and period 6 coincided with annual leave being taken and temporary redeployment of the pharmacy technician.

Discharge and general interventions formed the same intervention dictionary as similar common intervention themes arose from both.

FIGURE 5.
OVERVIEW OF GENERAL AND DISCHARGE INTERVENTIONS CATEGORISED WITH INTERVENTION DICTIONARY

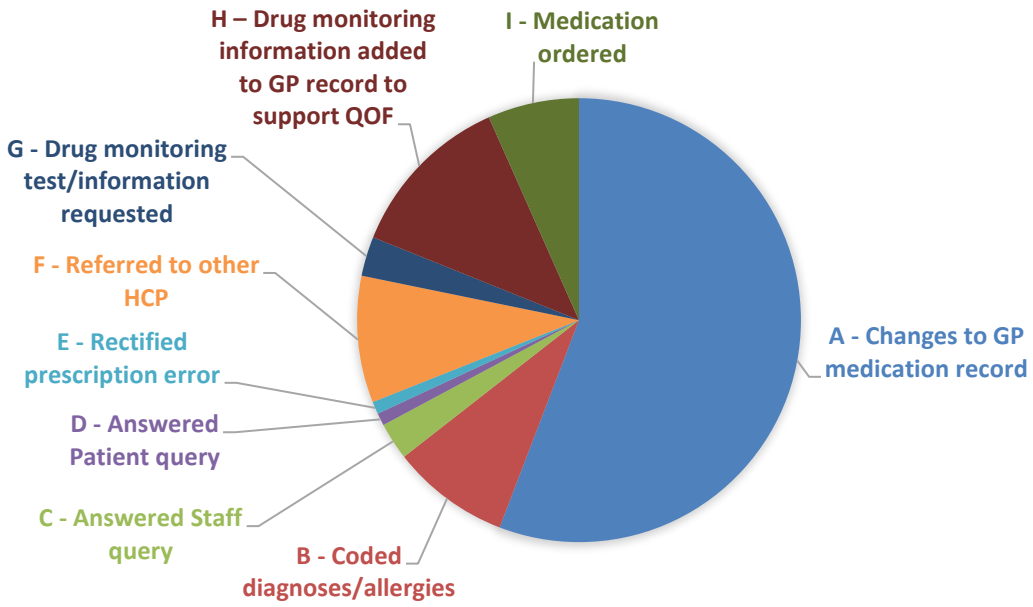


Figure 5 shows the most common type of intervention made was to make updates to the patient's medication record on the GP clinical system (A).

Other prevalent interventions included:

- Adding information required for drug monitoring to the GP record e.g. bloods, weight, creatinine clearance calculation which supported QOF indicators (H).
- Referring the patient for further medication review with an appropriate primary care clinician (F).
- Additional coding of diagnoses and allergies onto EMIS (B).
- Ordering medications as required (I).

Discharge

A total of 355 patients from 407 medicines reconciliations had discharge interventions recorded.

Table 1.
Common intervention types made in discharge interventions

Common Intervention types – Discharge Interventions	Inclusion in interventions
Changes to GP medication list	74%
Drug monitoring information added to GP record to meet QOF indicators e.g. bloods, weight, creatinine clearance calculation	20%
Additional coding e.g. diagnoses and allergies	16%
Referral made to other Health Care Professional	12%
Medication ordered for patient	9%

Counselling

A total of 95 patients from 407 medicines reconciliations received counselling related interventions.

Table 2.
Common intervention types made in counselling interventions

Common Intervention types – Counselling Interventions	Inclusion in interventions
Confirmation of medication regimen change	65%
Advice given on use of new/changed medications following discharge	40%
Advice given on ongoing monitoring and review of new/changed medications following discharge	29%
Advice given on ongoing supply of new/changed medications	10%

General

A total of 266 general interventions were recorded. This mainly included any actions made from viewing other medicine related documents such as clinic letters as well as ad hoc queries from members of the GP practice team.

Table 3.
Common intervention types made in general interventions

Common Intervention types – General Interventions	Inclusion in interventions
Changes to GP medication list	68%
Drug monitoring information added to GP record to meet QOF indicators e.g. bloods, weight, creatinine clearance calculation	11%
Referral made to other Health Care Professional	10%
PCN staff query resolved	8%

KPI 4 - Use of Hospital software

EDN

There was a time delay noticed between discharge and the EDN being visible to clinicians in primary care. Factors included a short delay in electronic receipt between Secondary and Primary care and also the document needing to be filed in the DOCMAN clinical system by practice staff. This issue was exacerbated by the prevalence of updated versions of the same EDNs being at different stages of workflow.

Having direct access to the EDN system allowed viewing of the EDN in real time. This was useful on 32 occasions during project interventions and in ad hoc queries to provide the most up to date information immediately as opposed to waiting for the workflow in GP clinical systems.

8x8

PCN staff were observed to have difficulty in contacting MFT hospital staff through existing methods regarding patient queries following transfer of care. On 17 occasions, access to the 8x8 telephone system was used to contact hospital clinicians to answer discharge related queries and aid project interventions. Examples included: contacting specialist nurses, pharmacists, and dieticians regarding ongoing medication/nutritional treatments.

JAC

The MFT patient dispensing record was accessed during 33 interventions. This was used primarily to check medication supply issued by MFT. This enabled the pharmacy technician to resolve GP practice prescription queries where drug information on received documents was vague, incomplete, or where patient's had queries about medications administered in hospital.

EXTRAMED/EPR

Hospital inpatient observations such as weight, blood pressure, and heart rate were rarely observed on discharge letters and the information was often clinically relevant and useful to support ongoing drug monitoring. Access to this hospital software allowed this information to be recorded and utilised in interventions on 20 occasions. This contributed to QOF indicators and could be used help inform the ongoing review of patients. Patient weight was often required to be up to date for creatinine clearance calculation. This is important for the monitoring of DOACs and needed to meet the associated QOF indicator.

Access to medical notes was occasionally able to yield answers to the rationale behind medicine changes which were unclear on the EDN discharge letter.

iLAB

Access to hospital pathology results was utilised a total of 74 times during interventions to add blood results relevant to ongoing medication monitoring. This furthermore contributed to QOF indicators.

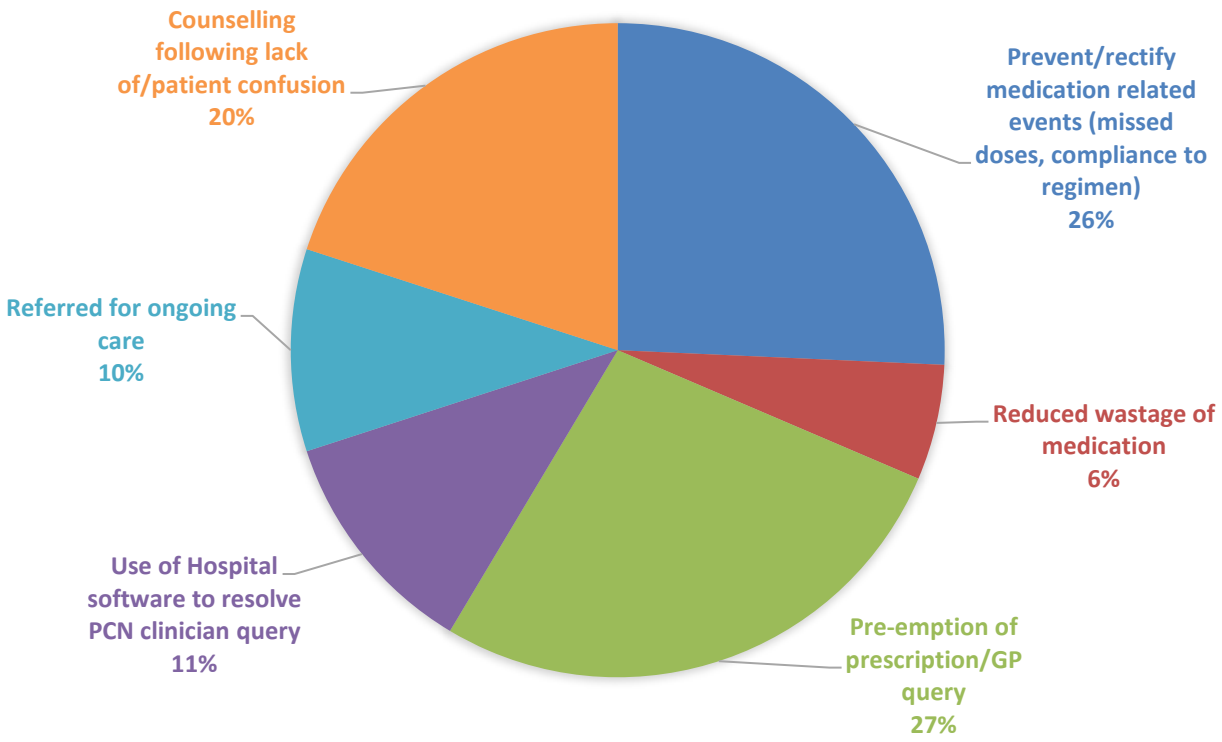
KPI 5 - Structured Medication Review (SMR) support

9 patients were successfully referred to the PCN Pharmacists for SMR during the project.

KPI 6 - Case Studies

A total of 29 patient interventions and consultations were recorded in detail and were captured primarily when following up patients after medicines reconciliation.

FIGURE 6.
OVERVIEW OF CASE STUDY THEMES CATEGORISED USING INTERVENTION DICTIONARY



The common themes of case studies recorded and shown in Figure 6 were:

Pre-emption of prescription/GP queries (27%) –

This included interventions where followed up patients had a medication supply or information issue/query from their EDN which, without intervention, would have required a GP appointment or input from GP staff.

Prevention/rectification of medication related adverse event (26%) –

This included interventions where patients were identified as uncompliant or at risk of non-compliance with their new medication regimen. Preventative action or resolution was carried out by the pharmacy technician.

Counselling requirement following discharge (20%) –

This included interventions where patients had been discharged with medicine changes but where not aware of vital information such as duration of treatment, titration regime, indication of drug, or administration instructions. Counselling was given in these cases.

Case study examples

1. A frail patient had been discharged from hospital 3 days previously with 3 medication changes to their Medicines Compliance Aid (Dosette box) as well as an additional acute medicine on a loading dose. The pharmacy technician followed up by telephone call after the EDN had been reconciled. The patient was experiencing confusion and had reverted to using their old dosette boxes. The patient and carer were counselled on using the new dosette box and acute medication as well as on ordering ongoing supply. Following the call, the community pharmacy were informed of the changes and were able to prevent repeat dispensing of the out of date prescription. The updated prescription was processed in order for the community pharmacy to have sufficient time to prepare before the patient's temporary hospital supply ran out.

2. Telephone follow up of a frail patient was made 4 days post hospital discharge. Medicines reconciliation showed many changes had been made to the patient's prescription including withheld antihypertensive medication, initiation of Rivaroxaban, and initiation of Oral Nutritional Supplements (ONS). Based on the patient and carer's needs, the pharmacy technician referred and prepared for follow up with the GP by: updating the prescription, counselling on the ongoing Rivaroxaban regimen, arranging supply of urgent medicine, and advising on home blood pressure monitoring so readings could be reviewed. Furthermore, instruction on ongoing ONS was unclear so 8x8 was used to contact the hospital dietician and expedite instructions for treatment plan. EXTRAMED and iLAB were used to record up to date weight and blood results from hospital admission to meet QOF indicators overdue on the patient's EMIS record.

3. An ad hoc query was received from a PCN practice nurse. Their patient had been to the hospital Accident and Emergency and advised by a doctor to change their antihypertensive dose however this was misunderstood and not recorded on a discharge notification. The pharmacy technician was able to quickly access hospital records with help of a hospital colleague contact to answer the query. This confirmation allowed the nurse to change the prescription and the situation was recorded through the hospital error/near miss reporting system.

Additional Project Data

Patient survey

A low response rate of 6 patients completed the patient survey following counselling intervention however these responses demonstrated positive feedback about the service delivered.

100% of the respondents found their post-discharge consultation 'very helpful' to their ongoing care and also confirmed this allowed them to better understand their medication regimen.

Comments made by respondents demonstrated that the consultation also helped them understand how to reorder new medicines following transfer of care.

Low response rate was accounted for by the distribution and delivery method of the survey being unsuitable to the demographic of patients counselled.

PCN Staff survey

A total of 7 responses were completed by PCN staff which also demonstrated positive feedback about the service. 6 respondents (86%) agreed that the pharmacy technician was beneficial for ongoing patient care, post-discharge medicines management and useful for information/communication between the primary and secondary care interface.

Comments made by respondents highlighted that the role helped ensure correct prescribing and reduced GP and prescribing team workload. It was also raised that awareness of the role and how it could help would need to be better shared across the PCN as a point for development of the role.

Electronic Discharge Notification (EDN) Audit

The audit revealed trending issues of poor quality with MFT EDNs and these included:

- Common unclear indications for medication changes
- Common duplication of EDNs to share updates by primary care clinicians post discharge
- Common unclear requests for GPs to review medication
- Unexplained medication switches to meet drug formulary/stock discrepancies between care settings

Other EDN quality issues raised by PCN and noticed by pharmacy technician:

- Diagnoses commonly unclear and often easy to incorrectly code at GP practice by non-clinical staff
- EDN letters from Same Day Emergency Care (SDEC) occasionally being sent months after discharge

These were leading to the following consequences at practices:

1. Medications not being linked to patient problems/diagnoses
2. Reconciliations being performed from out of date sources
3. Time wasted re-examining medication lists on EDNs containing updates
4. Medicine reviews unnecessarily requested and therefore ignored
5. Medicine switches being made by mistake
6. Patients being disengaged with/confused by updated treatment

DISCUSSION

Data gathered towards KPIs 1, 2, 3, and 6 (medicines reconciliation, interventions, and case studies) contributed significantly to many of the key aims of the project as well as highlighting other benefits of the role. In particular this included: Identifying areas for, as well as demonstrating, improvement to transfer of care, medicines reconciliation and associated medicines safety; Giving greater understanding of the processes and medicines management across the interface; Measuring the discharge workload faced by PCN teams; and identifying areas where actions regarding patient's medication and follow up is at risk of being missed.

The project data collected was unable to provide empirical evidence of hospital readmission avoidance however the interventions that prevented/rectified adverse medication events may have contributed to this.

KPI 1 – Number of medicines reconciliations completed following hospital discharge to PCN

The steady increase in medicines reconciliations seen in Figure 1 demonstrates how the workload achieved by pharmacy technician grew over time. This was accounted for as the process for identifying the most important patients for reconciliation became more streamlined and refined with the aid of referral criteria. Furthermore, additional GP practices in the PCN and DOCMAN task lists were integrated into.

The peak of 131 medicines reconciliations in period 5 was recognised as the benchmark for monthly expected workload that was achievable for the established role.

Figure 2 demonstrated a clear trend in decreasing medicine reconciliation time at a group of GP practices within the PCN. This trend, compared to the medicine reconciliation numbers in Figure 1, demonstrates an inverse correlation and validates how the pharmacy technician's input accounted for this improvement.

The high turnaround times noticed at during the introductory phase of the project were observed to be causing medication safety issues where discharged patients were not getting new or changed treatments reviewed and re-supplied before running out. This shaped the focus of workload for the project duration as NICE guidance recommends that medicines reconciliation should happen as soon as is practically possible, before a prescription or new supply of medicines is issued and within 1 week of the GP practice receiving the information (NICE, 2015).

As seen in Figure 2 the reconciliation times remained high initially which could be attributed to learning and catching up with workload in the introductory phase as well as annual leave of the pharmacy technician. The target time of 7 days was however consistently met in the middle to late phases, when most reconciliations were happening, which was important in reducing the opportunities for adverse medication events for post-discharge patients. The peak at the end of data collection was attributed to temporary redeployment of the pharmacy technician, however this further validates the impact made.

It is important to note the time taken to reconcile was also impacted by the staffing at the GP practices as the DOCMAN task list was shared and was reliant on workflow from others.

KPI 2 – Number of medicines reconciliations completed compared to the total number of discharges to the PCN

The results of this KPI indicate an estimate of the EDN letter workload generated by MFT compared to the estimate that the project role can meet. Figure 3 demonstrated that around a third of the MFT discharges to the PCN could be regularly reconciled by the pharmacy technician and this equated to near the full workload at the largest group of GP practices. It is important to note that the true amount would be much higher if all discharge letters, including those from other hospitals, were taken into account. However, this does further highlight the workload that the GP practice teams face to process and review transfer of care documents on top of other work streams.

KPI 3 - Interventions

Figure 4 demonstrates how the intervention numbers achieved by pharmacy technician grew over the span of the project. This is a direct correlation with the numbers of medicine reconciliations in Figure 1.

The peak of 194 total patient interventions seen in period 5 of data collection was recognised as a benchmark for expected workload achievable by the role.
Although not measured empirically the variety and amount of different intervention types made per patient also grew over the span of the project. This was attributed to ongoing learning of systems, increased IT access, and process development throughout.

Figure 5 and Tables 1-3 give insight into the common interventions made during the project. Most interventions involved making updates to GP medication records which often is the primary outcome of medicines reconciliation. This task would commonly be the responsibility of different clinical and non-clinical PCN staff dependent on the GP practice. The pharmacy technician however was able to use clinical knowledge, IT access, and time available to consider further interventions and add value by following the established project transfer of care document review process (see page 9). The majority of other common intervention types shown in Figure 5 and resulting from counselling (Table 2) were outputs of this process.

The overall result of these interventions was that:

- Medication monitoring requirements and associated QOF indicators could be better highlighted and met
- Medications were better linked to coded problems and diagnoses to support ongoing prescribing, de-prescribing, and medication reviews
- Important information vital to medicines management was routinely added regarding:
    - Review dates
    - Treatment durations
    - Titration details
    - Drug administration
- Patient follow ups pre-empted or resolved medication safety and supply issues
- Patients and PCN clinicians were better informed about new regimens and treatments
- Important clinical requests, safety issues, and queries were escalated more quickly

The combination of these benefits would not only improve patient safety and quality of care for those at risk of hospital readmission, but also help reduce workload within the PCNs, better comply with governance, and improve accuracy and efficiencies.

Counselling interventions commonly revealed that patient's had not grasped a full understanding of changes to their medications following transfer of care. Many patient's referred to a lack of counselling on discharge where others had misunderstood or not thoroughly read their discharge letter.

A key finding was that four counselling interventions occurred where, on admission, patient's had been initiated on Rivaroxaban for DVT/PE at the loading dose of 15mg twice daily for 21 days. MFT Pharmacy ensure discharge supply of this initial course but request that the GP prescribe ongoing supply of the ongoing 20mg daily maintenance dose. Patients in these cases had little understanding of the treatment and that they would need to get GP supply to continue treatment at 20mg daily thereafter. This particular issue was taken forward into a service improvement work stream to be implemented within MFT.

KPI 6 – Case Studies

The overview of case studies themes (Figure 6) and content further supported the benefits seen from the interventions. Common themes indicated that many patients who were followed up post discharge did not fully understand their new/changed medications regimens and were uncertain about ongoing supply and treatment under their GP. The interventions made were important in pre-emptively identifying and helping solve these issues in a timely manner. This was backed up by the responses from the patient survey.

The case study examples gave specific instances of aiding patient safety, reducing demand on PCN clinicians, reducing medicine waste, and supporting ongoing care:

Case study 1 - The rapid post-discharge follow up of the patient prevented further doses being missed as well as preventing medication waste by stopping supply of an out of date prescription in a compliance aid. Involvement of the patient's carer reinforced medicines management for the confused patient.

Case study 2 - The interventions made for the patient reduced workload on PCN staff through pro-actively ensuring post discharge follow up requirements were met whilst ensuring medication regimen compliance and aiding practice governance indicators. The use of hospital software and contacts was of further benefit for medicines management and ongoing care.

Case study 3 – This demonstrated how the use of networking and communication across the interface saved time for PCN staff and led to better cross-sector reporting of near misses/errors.

KPI 4 - Use of Hospital Software

Access to hospital software was overall of great benefit to medicines reconciliations, transfer of care interventions, and to communication across the interface.

The accuracy and quality of medicines reconciliations were enhanced by the ability to have rapid up-to-date access to inpatient records which allowed better version control of EDNs and access to more information to resolve medication queries.

Transfer of care interventions were enhanced by the ability to rapidly find out inpatient observational and clinical data. This could then be used to update patient GP records with the benefits of: informing ongoing medication monitoring and review, earlier identification/resolution of ongoing care issues, and saving GP staff and patient time in requesting this information.

It was noted in normal practice at the PCN that patient appointments (e.g. for weight, blood pressure, and blood tests) would often be specifically requested if required following review of transfer of care documents. By using appropriate clinical information from hospital admission, this workload could be reduced saving the patient, practice staff, and local services time and money.

Communication to MFT was observed to often be difficult and time consuming for PCN staff when requiring inpatient/clinic information. The ability of the pharmacy technician to quickly and easily access contact information using email and 8x8 made collaboration and information sharing much more accessible and efficient when required.

KPI 5 - Structured Medication Review (SMR) support

Opportunities for co-operative working with PCN Pharmacists were limited due to conflicting work streams, training requirements, lack of shared workspace, and commitments to practice Covid-19 clinics. This meant it was only considered practical to solely refer candidate patients for SMR with the PCN Pharmacists following intervention. This KPI did not yield meaningful results to the project, however, insight was gained into how hospital patients who would benefit from SMR identified in primary care could be better referred to PCN pharmacists for this service.

Collaboration: improved networking and peer support

The pharmacy technician was able to collaborate with ILR interface pharmacist and PCN pharmacists to ensure ILR care plans were followed up with referred patients. This included: updating prescriptions, informing the GP, ensuring community pharmacy supply, and direct/indirect follow up with the patient.

8x8 was utilised during some interventions to get specialist hospital pharmacist advice to explain hospital medication changes and supply of ongoing specialist medicines. Access to the paediatric pharmacist was especially useful for confirming ongoing treatments using specially manufactured medication.

Shared learning across the interface to support transfer of care

It was observed that additional important medication information from EDNs or other transfer of care documents was not being routinely added to the GP medication record dependent on the PCN staff. This included adding:

- Hospital/clinic only and Over-The-Counter medications
- Titration details/dates
- Treatment durations
- Review dates
- Administration recommendations
- Drug monitoring requirements

The benefits of doing this, as highlighted in the discussion of KPI 3, occurred verbally with PCN prescription and pharmacy teams as well as being included in a how to guide/recommendations document for the PCN. This document was also used to promote the awareness of and referral to local integrated pharmacy services for patients requiring additional support on discharge.

Findings highlighted by the EDN audit were brought forward to the MFT EDN steering group. Due to impending introduction of EPMA there would not be further updates to current EDN system but instead the findings and recommendations could be incorporated into EPMA. Subsequently ideas based on this were introduced to the EPMA project development team by the pharmacy technician.

Additionally working in the primary care setting gave an important insight into best practice that can be adopted by secondary care pharmacy staff. The trend noticed with poor patient discharge medicines counselling prompts the importance of this in the hospital setting. Shared learning has led to MFT pharmacy initiation of an improvement project on discharge counselling including an anticoagulation checklist to address the issue seen with Rivaroxaban.

An opportunity was also taken to raise awareness of the benefits and best practice of Patient Own Drug (POD) transfer between care settings by creating and introducing posters to MFT and the PCN with input from a Patient Participant Group (PPG) meeting.

Improved near miss/error reporting between care settings

Error/near miss reporting between the PCN and MFT was seen to be minimal during the project which was attributed to the limited links across the interface. The pharmacy technician was able to directly report errors and near misses with MFT EDNs and clinic letters found within the PCN directly. This consisted of using direct access to the MFT reporting database and contacting individual clinicians.

RECOMMENDATIONS

Referral criteria

An ongoing role would need to target patients who would most benefit from enhanced medicines reconciliation and follow up post transfer of care/discharge. The indication of workload shown by the results of KPI 2 demonstrates how reviewing all EDNs in the PCN would not be practical for the role. The PCN recommended Enhanced Medicine Reconciliation Process (Appendix 4) could be utilised to highlight and intervene with the most needful patients who would gain the most benefit from the service.

Awareness

During the project the pharmacy technician was unsuccessful at integrating with all PCN surgeries in the time period. Promoting early awareness of the role and the specific work it can support with would be critical to ensuring the service is fully utilised and shared equally throughout a PCN. Feedback from the PCN staff survey confirmed the importance of this. The project service referral poster for PCN and communication (Appendix 1), if shared earlier, could have had a more significant impact on engagement. However, it took time to gain understanding and create an appropriate triaging list and workflow in this pilot.

Managing workload

Process mapping the workflow of transfer of care documents was instrumental in determining where the most/greater need for medicines reconciliations and interventions could be made during the span of the project.

It was realised that larger practices, where the time taken to reconcile the documents was high, were of priority to ensure patient's had prescription changes and follow up actions completed in a timely manner. In smaller practices in the PCN the documents were taking much less time to be reconciled and were quickly reviewed by a GP.

Workspace

A need was identified to have GP practice presence regularly. During the pilot there were very few patient referrals sent to the pharmacy technician from the PCN surgeries that did not receive regular attendance.

The increasing number of ARRS roles within the PCN and general lack of available workspace created a significant barrier to being able to be physically present within the PCN surgeries during large periods of the project. This issue was exacerbated by the COVID-19 pandemic which further reduced ability to work onsite. Remote working from a hub could be utilised to give the role a base in which to work from as well as offering further peer support.

IT

The demands and provision of the project role as well as workspace circumstances in the PCN meant that a hospital laptop needed to be used heavily for access to both the GP and hospital IT systems. Partial access due to problems with installation and compatibility hindered the capacity of many work streams and interventions for many large portions during the project with few resolutions.

This affected the ability to remotely:

- Open certain files within EMIS
- Request blood tests via DartOCM
- Use AccuRx
- Have full function in DOCMAN
- Utilise Scriptswitch for medicine updates.

A bespoke IT package would highly recommended so fully working access to GP IT systems can be available remotely.

Training requirements

The workflow differences and variation in roles and responsibilities within different GP practices made induction and training for the pharmacy technician challenging. Understanding how the GP clinical systems are used in each also requires an individualised approach. Existing learning programmes and courses related to PCN pharmacy technicians are currently limited or require a long time commitment. These were of little use during the project. Shadowing of and supervision under existing PCN technicians, pharmacists, and other GP practice staff would be of most benefit currently to a rotational role.

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APPENDICES

Appendix 1 - Project service referral poster for PCN

Medway South PCN

NHS Medway NHS Foundation Trust

Cross Sector Pharmacy Technician
Medway South PCN / Medway Hospital

Patients to Refer:

- Those who require medicines reconciliation e.g. following transfer of care settings
  - Particularly those with 3+ medication changes
- Those whose new/changed medication requires follow-up
  - i.e. Blood monitoring, symptom/blood pressure follow up
- Those who would benefit from additional counselling/explanation of medications i.e.
  - Numerous medication changes including stopped medicines
  - New medicines prescribed whilst in hospital/clinic that require GP to continue
  - New/changed medicines in varying/changing doses, either increasing or decreasing over a period of time
- Patients who are ***vulnerable/confused/housebound/adherence issues*** and are likely to struggle following changes to their medications

This service can identify and directly refer patients to our PCN, Interface Local Review and Acute Frailty specialist teams for additional support in care needs

Medway Hospital Queries: (Send to **medwayft.medsqueries@nhs.net**)

- Issues/discrepancies with discharge letters
- Inpatient medication changes
- Dispensary and outpatient medication supply
- Finding clinician/department contacts

Please don't hesitate to contact regarding other issues that can be directed to an appropriate member of the hospital/PCN pharmacy team

Best of care Best of people

Appendix 2 - Patient Survey

1. How helpful to your ongoing care did you find the input from the Pharmacy Technician?

Very helpful
Helpful
Not helpful

2. Did your interaction with the Pharmacy Technician allow you to better understand your medications?

Yes
No

3. Can you please provide reasons for your answers? Are there any areas the Pharmacy Technician did well or areas for improvement?

Comments

Appendix 3 - PCN Staff Survey

1. Did you think the input from the Pharmacy Technician was beneficial for ongoing patient care and post-discharge medicines management?

Agree
Neither agree nor disagree
Disagree

Comments

2. Did you consider the Pharmacy Technician useful for information/communication between the primary and secondary care interface?

Agree
Neither agree nor disagree
Disagree

Comments

3. Was there anything that you found about the Pharmacy Technician's role that worked particularly well?

Comments

4. How could this role be developed to better suit the needs of your PCN team/surgery?

Comments

Appendix 4 – PCN recommended Enhanced Medicine Reconciliation Process

Examples of patients to be referred:

- Those with 3+ medication changes or changes to high risk medications
- Those whose new/changed medication required follow-up i.e. Blood monitoring, symptom/blood pressure follow up
- Those with new/changed medicines in varying/changing doses, either increasing or decreasing over a period of time
- Those concerning patients highlighted as vulnerable/confused/ housebound or with adherence issues and likely to struggle or need further support following changes to their medications