

Expanding the role of pharmacy technicians and foundation rotational pharmacists in delivering patient-centred care at a mental health trust: development of a Medicines Optimisation Intervention Track Tool

Maria Concepcion Gonzalez-Torres , Elizabeth Milverton, Katharine Hazel Rowtcliff

Medicines Optimisation Team,
Devon Partnership NHS Trust,
Barnstaple, UK

Correspondence to

Dr Maria Concepcion
Gonzalez-Torres, Medicines
Optimisation Team, Devon
Partnership NHS Trust,
Barnstaple EX31 4JB, Devon,
UK; concha.gonzalez@nhs.net

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ABSTRACT

Objective Medication has a significant role to play in any hospital admission and in the road to recovery. Medication interventions to improve patient education are essential for better outcomes. Medication interventions in our unit have not previously followed a systematic procedure. They have not been quantified and do not encompass all patients. This study aims to develop a simple tool that can significantly help the effective prioritisation of the workload among the Medicines Optimisation Team, ensuring patient-centred care is optimised.

Methods This is an observational case series study. A basic Excel spreadsheet was designed to capture the team's daily interventions focusing on four main areas: medicines reconciliation, admission, follow-up and discharge. We named it the Medicines Optimisation Interventions Tracking Tool (MOITT).

Results Analysis of the data showed a good number of patients receiving interventions: 122 (92%) medicines reconciliation, 77 (58%) admission interventions, 64 (48%) follow-up interventions and 28 (21%) interventions on discharge. This quantification of work revealed factors which prevent achieving a higher percentage of interventions. The criteria to complete the spreadsheet were modified accordingly to address these factors resulting in an improvement in the design of the tool and the protocol to follow to complete it. In addition, it was encouraging to see the team's hard work portrayed in figures for the first time.

Conclusion The MOITT developed facilitates an efficient clinical prioritisation of work for the Medicines Optimisation Team. This study has shown that this novel way of working is advantageous to record and keep track of the Medicines Optimisation Team's daily interventions on an inpatient ward, helping to set daily objectives. Implementation of this tool increases targeted patient interventions and team productivity and influences changes in practice to adapt to the service needs. The role of pharmacy technicians is critical for the implementation of this tool and patient outcomes, which is in line with the UK Hospital Pharmacy and Medicines Optimisation plan dated 2016.

INTRODUCTION

An integral pillar on the road to both mental and physical recovery, medication is central to our model of care. Education regarding medication has been

extensively documented as essential to improving patient understanding and therefore improving overall experience.^{1 2} Health literacy,^{2 3} health coach⁴⁻⁶ or medication therapy management^{5 7 8} are just three examples of how this could be achieved.

Patient-centred care, as it is also called, is one of the four principles included in the good practice guidance for medicines optimisation published in 2013 by the Royal Pharmaceutical Society of Great Britain, and has been used as a reference for developing the aim of a Medicines Optimisation Team (MOT).⁹

In a psychiatric hospital, this principle has significantly helped to increase the involvement of the MOT in patient recovery, minimising the risk of readmissions by increasing patient understanding of treatment. Identifying the importance of these interventions is the objective of several published studies.¹⁰

Traditionally, within the structure of the MOT, it has been the clinical pharmacist's responsibility to provide this information. This role is well supported and accepted in the literature, but demands in the health service are creating a need for the role of the senior clinical pharmacist to expand, requiring more involvement in other clinical activities.^{4 10-13} The role of the pharmacy technician is also evolving from a functional practical role to a more active and intervention-focused one. With adequate training as 'Clinical Technicians' including clinical prioritisation and supervision, they can take responsibility for improving patient outcomes.^{7 14 15}

The addition of pharmacy technicians and foundation rotational pharmacists to a MOT to make patient interventions and take responsibility for improving patient outcomes presents new challenges: the tracking and clinical prioritisation of the interventions. Tracking and recording interventions is, at this point, essential to ensure the interventions are effective, avoiding duplication or oversight. This method is a novel way of working, whereby organisation and structure are essential for a positive outcome. Since a literature search in this area did not produce any previous results, we decided to report this experimentation of a novel way of working.

This study focuses on developing a tool to deliver patient-centred medicine optimisation interventions and includes all medicines prescribed.



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Table 1 Spreadsheet template headings

(A) MOITT Template									
PN	AD	Meds Rec	Medicine conversation on admission	Follow-up	Discharge conversation	Discharge date	TTA sent to GP	Meds Rec on discharge	Community pharmacy contacted
XX	DD/MM/YY	DD/MM/YY	DD/MM/YY	Fail to engage	Unexpected discharge	XX/DD/YY	Y		Y
YY	DD/MM/YY	DD/MM/YY	DD/MM/YY		XX/DD/YY	XX/DD/YY	Y		
(B) MOCAP template									
PN	Meds & Dr plan (WR)	MHA status	MOT care plan	Interventions	PHM	Comments/learning	Discharge	Date last updated	
AD, admission date; MHA, Mental Health Act; MOCAP, Medicines Optimisation Care Plan; MOITT, Medicines Optimisation Interventions Tracking Tool; MOT, Medicines Optimisation Team; PHM, physical health monitoring; PN, patient name; Meds Rec, medicines reconciliation; TTA, to take away medication; WR, ward round.									

Simultaneously, it aims to help prioritise work, demonstrating that pharmacy technicians and rotational pharmacists can successfully lead in the delivery of medication therapy management under the clinical supervision of a senior pharmacist, thus facilitating for them other clinical opportunities.

METHODS

Study design

This is an observational case series study.

Setting

The study took place from July 2019 to December 2019 on an acute adult inpatient hospital ward of a mental health unit in North Devon, one of three inpatient locations that Devon Partnership NHS Trust has in Devon, UK.

Patients were aged from 18 to 65 years and presented with acute exacerbation of symptoms requiring hospital admission. The ward had a variable number of beds, from 24 in July to 16 in November.

We had an experienced and dedicated MOT that included a senior pharmacist, a part-time clinical prioritisation pharmacy technician, a medicine optimisation pharmacy technician and a rotational pharmacist to provide clinical and pharmaceutical support on the ward.

Patient inclusion/exclusion

Patients with a length of stay <12 hours were not included in the study. Patient eligibility to receive interventions were affected by several factors, depending on the intervention category.

Data collection

An Excel spreadsheet was designed to capture the team interventions focusing on four main areas: medicines reconciliation and medicines conversations on admission, follow-up and discharge.

We recorded each intervention, annotating its delivery date and using a colour code to identify who completed the intervention. Alternatively, we recorded the reason why there was no intervention. We backed it up daily. The initial spreadsheet was called the Medicines Optimisation Interventions Tracking Tool (MOITT) (table 1A).

Types of interventions

Interventions recorded in this study included patient discussions about adherence, compliance and side effects in order to maximise the optimal use of medicines for the individual.

Medicines reconciliation (MR): the aim was to complete the patient medicine reconciliation in the first 24 hours of admission and to include a conversation with the patient when possible.

Admission intervention (AI): We designed a consultation template to be used during the conversation with the patient. The template prompted questions that would provide information relevant to medication interventions during their inpatient stay and discharge preparation. Examples of questions included:

- ▶ Do you administer your own medication?
- ▶ Do you understand what each of your medications is prescribed for?
- ▶ Do you have a regular community pharmacy?

Follow-up intervention (FUI): During the inpatient stay, the patient notes from ward rounds were reviewed daily by the rotational pharmacist or senior pharmacist. The intervention included an expectation to attend ward rounds to identify changes in medication, side effects and other problems that could jeopardise the treatment adherence and to counsel patients accordingly.

Discharge intervention (DI): The main goal was to attend discharge meetings and offer support to patients in their transfer to primary care. This task could mean contacting the community pharmacy, the community mental health team and their GP,

Table 2 Number of patients clustered by the length of inpatient stay and type of intervention received

Length of inpatient stay interval (days)	Total no of patients	MR		AI		FUI		DI	
		PMR	PNMR	PAI	PNAI	PFUI	PNFUI	PDI	PNDI
1–7	37	34	3	20	17	1	36	2	35
8–21	31	29	2	20	11	10	21	3	28
22–44	32	30	2	21	11	23	9	13	19
45–222	33	29	4	16	17	30	3	10	23
Total no of patients	133	122	11	77	56	64	69	28	105
AI, admission intervention; DI, discharge intervention; FUI, follow-up intervention; MR, medicines reconciliation; PAI, patients with admission intervention; PDI, patients with discharge intervention; PFUI, patients with follow-up intervention; PMR, patients with medicines reconciliation; PNAI, patients without admission intervention; PNDI, patients without discharge intervention; PNFUI, patients without follow-up intervention; PNMR, patients without medicines reconciliation.									

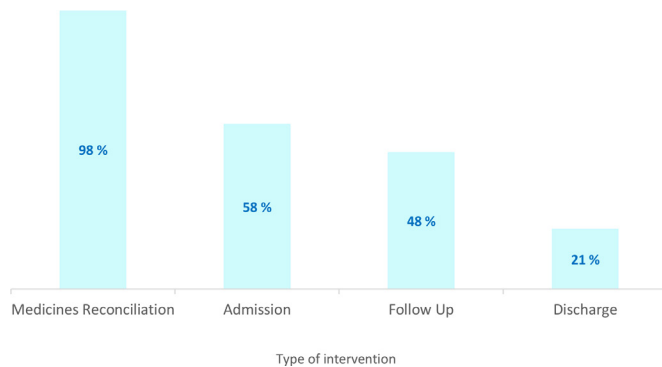


Figure 1 Percentage of the total of patients in the study receiving interventions by type of intervention.

while also ensuring patients knew where/how to get their repeat prescriptions to prevent future compliance issues.

All interventions were documented in the electronic patient records.

Outcome measures

1. Optimisation of the MOITT as an intervention tracking system that is reliable, easy to use and implement as a quick tool of communication between the MOT led by pharmacy technicians and rotational pharmacist.
2. Establish clear guidance of how to use the MOITT and which patients will benefit most from interventions.
3. Evaluate the improvement in capturing and organising the number of patient interventions by the MOT by using an electronic system.
4. Identify barriers to achieving these outcomes.

Data analysis

Descriptive statistics and histograms were used to organise ordinal categorical data in intervals (the length of inpatient stay). Categorical nominal discrete data were expressed as a percentage.

RESULTS

A total of 134 inpatients were followed and interventions were recorded using the MOITT over 6 months (July–December 2019). One patient whose length of stay on the ward was <8 hours was excluded.

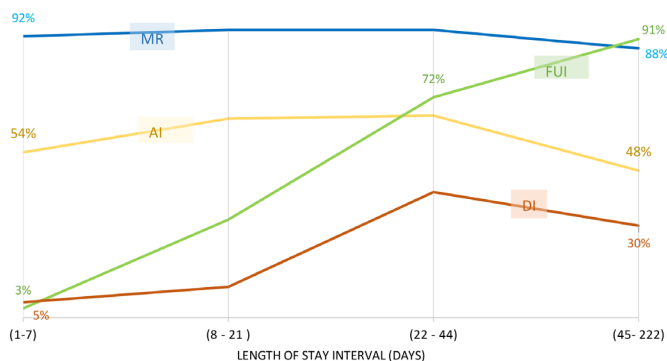


Figure 2 Percentage of patients receiving interventions clustered by the length of stay in days and type of intervention: medicine reconciliation (MR), admission intervention (AI), follow-up intervention (FUI) and discharge intervention (DI).

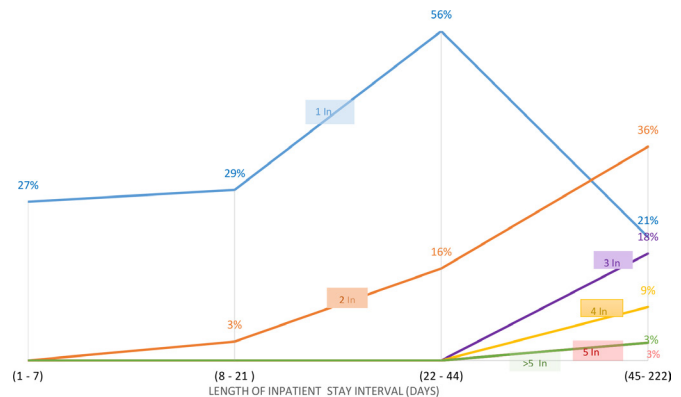


Figure 3 Percentage of patients per number of follow-up interventions received by the length of inpatient stay (days). In, interventions.

Data clustering and length of inpatient stay

Descriptive statistics and histograms were used to define intervals of the length of inpatient stay and establish the mean (38 days) and the median (21 days) of the length of stay. Based on these results, the data were clustered into four intervals: 1–7 days, 8–21 days, 22–44 days and 45–222 days (table 2).

Patients and interventions

The total number of patients ($n=133$) included in the study was correlated to the length of stay and type of intervention to ascertain if there was a directly proportional relationship (and the strength of this relationship) between the number of interventions received or type of intervention and length of inpatient stay.

The number of patients receiving interventions was recorded using the MOITT and distributed as follows: 122 (92%) MR, 77 (58%) AI, 64 (48%) FUI and 28 (21%) DI. Table 2 shows the number of interventions per category and length of inpatient stay.

The total number of patients with interventions and no interventions in each intervention category was also grouped by length of inpatient stay. The number of patients with each intervention is shown in figure 1 and the number of patients with interventions combined with the length of inpatient stay is shown in figure 2.

Analysis by intervention category

The analysis of the results by category of intervention is shown in table 2. In the case of FUI, some patients received more than one intervention during their inpatient stay (figure 3).

DISCUSSION

This study has shown that this novel way of working is extremely useful for recording and keeping track of the daily interventions performed by a MOT on an inpatient ward. This method of working has also given more responsibility and leadership to pharmacy technicians and the rotational pharmacist with adequate training and support by a senior pharmacist, as has been discussed and proposed in other published articles.^{5 6 16}

This innovative process gives the senior clinical pharmacist valuable time to focus on individual problems and other clinical activities while still being able to supervise the ward medication interventions if needed. This approach is different from the traditional way of working where the pharmacist is responsible for performing the interventions.^{12 13}

Table 3 Factors affecting the number and type of interventions received by patients

Factors	MR	AI	FUI	DI
Unexpected discharge, inpatient stay too short (includes SAFTI), other unexpected events	✓	✓	✓	✓
Not focus on intervention/shortage of staff	✓	✓	✓	✓
Not recorded included (prior to July)	✓	✓	✓	✓
Unwell on admission (includes transfers)		✓	✓	✓
Fail to engage		✓	✓	✓
Inpatient stay continued (length of stay)			✓	✓
Transfer from another ward in our Trust	✓			
Readmission		✓		

AI, admission intervention; DI, discharge intervention; FUI, follow-up intervention; MR, medicine reconciliation; SAFTI, Self-Accessed Flexible Treatment Intervention.

Our differential approach encompasses a multidisciplinary concept, with the pharmacy technician trained in clinical prioritisation delivering the interventions. This approach has been well established in other studies.¹⁵

Prior to this study, interventions in the wards have been done on an ad hoc basis without keeping a necessary order or goal but somehow following the medication therapy management as described in other works.^{7 15} This new proposed tool helps the team to organise the daily tasks in a fashioned manner and simultaneously recognises the work done by the team. We have been able to identify what patients or problems require our attention and focus on better outcomes, which are novel in the world of clinical pharmacy research.

The results were looked at retrospectively to identify if any modifications were needed in the design. Similar to previously published articles,¹ results analysis was also used to identify how any improvement in results (ie, increasing the number of patients receiving interventions) could be made, such as establishing selection criteria for patients who would benefit from a specific intervention.

The data analysis identified the factors affecting the number of patients receiving interventions and the need for these to be taken into consideration when calculating the denominator to present data (table 3).

Transfer from other wards

This type of admission would mainly affect MR data. Patients admitted to the wards via a transfer were considered exempt from the dataset (n=11; table 1) because they had already received a MR in another part of our Trust, so this could not be done by our MOT. The only exemption here would be where transfers happened in the first 24–48 hours of admission and the MR has not happened. There would be an expectation to include these cases in the eligibility to receive the MR intervention.

Unexpected discharge, transfer, inpatient stay too short (including SAFTI), weekend admissions, other unexpected events

Self-Accessed Flexible Treatment Intervention (SAFTI) is a 3-day inpatient stay intended to prevent a readmission. The patients bring their medication and do not receive any input from the inpatient team. They only are considered for MR. At first we did not consider these patients for other interventions, but we concluded they could benefit from the AI in order to identify any problems with adherence and concordance with medication, as well as evaluating the need for other support to understand and

maximise their treatment. In these cases, the AI can be incorporated into the MR intervention.

Patients with admissions over the weekend, inpatient stay too short, or both are at risk of missing the 72-hour target for completing the MR. However, this did not happen during the duration of our study.

There have been a considerable number of cases where the admission ended unexpectedly; this is the second most common reason for missing an intervention in all categories.

The analysis of the data made us realise how unpredictable the discharge from the wards could be. Unexpected discharge generally happens in the first week of admission. It is essential to be mindful and, where possible, to make changes to the structure of the interventions. Several options suggested are inclusion of the AI in the MR intervention, as suggested in the SAFTI admissions, mentioning of discharge planning in the AI and establishing a plan in the FUI. Depending on the patient's presentation and recovery on the ward, we can be flexible in the timing of AI, FUI, DI or all of them in anticipation of a surprise discharge.

Most of the missed interventions relating to discharge were due to the patient being transferred or discharged without prior notice. A way of preventing this from happening in future is to start preparing patients for discharge earlier in the inpatient stay. Now the discharge planning is mentioned in the admission conversation and started in follow-up to prevent future incidence of this and improve DIs and thus patient experience.

With time constraints, we have become efficient in the way we work. One of the new duties for the rotational pharmacist is to attend different meetings related to discharge – that is, the ward round for discharge, Section 117 meetings and best interest meetings. We receive an outlook calendar invitation in our generic email, making it easy to keep up to date with ward movement and embed these activities into our daily schedule.

Not focus on intervention/shortage of staff

An appropriate staffing level is crucial to deliver the interventions. It is evident from the data that a low number of interventions in parts of the study correlate with staff absence. As a result, situations arose where the focus was in favour of the most relevant intervention. Initially, we were more concerned in the AI; consequently, other interventions were neglected and are the primary reason for missing the FUI and DI (28% in the case of the follow-up data).

During the study the initial spreadsheet was not reflecting the actions with each patient, so a second spreadsheet was created called the Medicines Optimisation Care Plan (MOCAP) which acted as a succinct clinical handover within the team. Clinical prioritisation input from the medicines optimisation technician also helped highlight any areas for clinical intervention and review for particular patients. The initial basic design was optimised in content and use throughout the study. The spreadsheet has potential for personalisation to reflect the needs of the team, but necessary constants of its framework include patient medication, MHA status and MOCAP, physical health, abnormal blood results and discharge date. The maintenance of this tool lies not only with the rotational pharmacist but also with the collaboration of the whole team (table 1B).

The MOITT is an easy and effective way of planning, targeting patients for interventions and recording interventions on an acute mental health ward. It can be used to ensure that counseling about medications is being offered to all patients and also to produce a medication care plan targeting medication education, adherence and compliance on discharge.

The introduction of the MOITT has improved communication between the team and is also the focus of a different approach to delivering patient-centred care. It is an uncomplicated and necessary method to organise and track the day-to-day responsibility of an MOT in an acute psychiatric ward.

The need for a complementary tool to the MOITT was acknowledged with the MOCAP, which comprised an individualised medication care plan and highlighted the actions and interventions needed within a specified time frame (table 1B).

Pharmacy technicians have been shown to be able to lead in the delivery of patient interventions within a health coach model method to support and free the senior clinical pharmacist, as suggested in the literature.¹⁻⁴

In general, pharmacy technicians show great enthusiasm in implementing this approach. Equally, the engagement of the rotational pharmacist depends on the level of interest in mental health. However, all enjoyed involvement with patients. The whole team needs to have ownership of the health coach process and understand how crucial it is to work as a team.

The model has highlighted the crucial role of the AI and has changed local practice, combining AI with the MR intervention in cases with a higher risk of a short inpatient stay. All interventions must aim towards discharge from the patient admission. The goal is to integrate the outcome of the conversation into the patient electronic care plan.

The primary limitation of this innovative model is the availability of staff. Spreadsheets require a daily update to ensure the method works and could be an added burden when there is a staff shortage. It requires, in any case, prioritisation of workload.

The recent introduction of Microsoft teams during the COVID-19 pandemic has made it possible for more than one user at a time to work on the spreadsheet simultaneously. However, all details must be anonymised for confidentiality reasons. The final goal is to build an app that could easily be used in electronic devices and be accessible to all ward staff including consultants in the electronic records system, allowing them to check a patient's progress related to medication education. At the time of writing this paper, the MOITT has been a useful tool during the COVID-19 pandemic. Some MOT members were shielding or in self-isolation. The tool was essential to maintain continuity of patient care in this case, and to follow the ward's evolution from a different setting.

The quality of the interventions delivered has been identified as a focus for further work now that a routine using MOITT and MOCAP has been established.

Problems were identified with the process of discharge, and designing a robust protocol in the transition from secondary to primary care is the target in future studies, the findings of which will be presented in a future article.

SUMMARY OF KEY POINTS

- ▶ Initial implementation of the tool identified that the team were missing more DIs than previously realised. This influenced a change in practice to include discharge conversations throughout the inpatient stay rather than at the end.
- ▶ The MOITT has proved to be easy and effective to use when planning daily tasks.
- ▶ The tool is successful in increasing targeted patient interventions.
- ▶ The data recorded in the MOITT can be used in staff performance reviews.

- ▶ In the future, if the activity documented on the MOITT is mapped against staff shortages, it can be used to support a business case for workforce development.
- ▶ The study highlighted the changing role of the pharmacy technician into a more clinical environment as per UK Hospital Pharmacy and Medicines Optimisation plan dated 2016.¹⁷
- ▶ The application of the MOITT can be amended to reflect the needs of the service – for example, if the aim is to review the types of interventions being made

What this paper adds

What is already known on this subject

- ⇒ Patient-centred medicines optimisation interventions are key to minimising the risk of readmission in a mental health unit.
- ⇒ The role of the pharmacy technician is evolving to address the recommendations in the Carter Review.
- ⇒ To improve patient outcomes, patient-centred interventions require prioritisation.

What this study adds

- ⇒ The development of a Medicines Optimisation Interventions Tracking Tool (MOITT) supports the prioritisation, consistent delivery and monitoring of effective person-centred medicine optimisation interventions.
- ⇒ The use of a MOITT enables pharmacy technicians and rotational pharmacists to lead on the consistent delivery of planned interventions, ensuring medicine optimisation is firmly embedded into practice.

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ORCID iD

María Concepcion Gonzalez-Torres <http://orcid.org/0000-0002-8722-0537>

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