

## PHYSICAL HEALTH ASSESSMENT AND MEDICINES RECONCILIATION ON ADMISSION TO AN ACUTE MENTAL HEALTH UNIT: A QUALITY IMPROVEMENT PROJECT

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### SUMMARY

*Individuals with mental health disorders are at greater risk of physical health problems. Medicines reconciliation reduces medication errors on admission.*

*The aim of this project was to improve compliance with the completion of physical health assessments and medicines reconciliation forms by using a set standard stating that all patients must have the above completed at the point of admission to an acute mental health unit.*

*The notes for all inpatients were reviewed for evidence of completed physical assessments and medicines reconciliation forms. This was done at three different time points: baseline, 2 months after the introduction of recommendations (1st intervention) and 2 months later when an online system of record keeping was trialled (2nd intervention).*

*At baseline (n=33), 16 (49%) had a physical examination, 15 (46%) had an ECG, 17 (52%) had baseline bloods and 4 (12%) had a completed medicine reconciliation form. After the 2nd intervention (n=31), 25 (81%) had a physical examination, 25 (81%) had an ECG, 23 (74%) had baseline bloods and 23 (74%) had a completed medicine reconciliation form.*

*Physical health assessments and medicines reconciliation are important aspects of patient care. The interventions introduced have improved the quality of practice at an acute mental health unit.*

**Key words:** *physical health assessment - medicines reconciliation - mental health disorders - psychiatric illness - quality improvement*

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### INTRODUCTION

It is widely recognised that individuals with mental health disorders are at greater risk of physical health problems and premature mortality (Robson & Gray 2007). Patients with these disorders are at increased risk of cardiovascular disease (Osborn 2006), diabetes, respiratory disease and infectious diseases including human immunodeficiency virus and tuberculosis (De Hert et al 2011, Robson & Gray 2007). In high-income countries, males with mental health disorders have a reduced life expectancy (approximately 20 years less) compared to males without such disorders. Similarly, females with mental health disorders have a reduced life expectancy (approximately 15 years less) compared to their counterparts without such disorders (Thornicroft 2011). As such, it is imperative that physical health assessments are performed routinely in psychiatric patients.

The potential adverse effects of psychotropic medication on physical health are well established (Robson & Gray 2007). Many commonly used anti-psychotics are associated with an increased risk of cardiovascular and metabolic abnormalities including obesity, dyslipidaemia and hyperglycaemia (De Hert et al 2011). Various antipsychotic and antidepressant medications are known to prolong the cardiac QT interval (Wenzel-Seifert et al. 2011) and increase the risk of polymorphic ventricular tachyarrhythmias, which may lead to sudden cardiac death. In addition, typical antipsychotic medications are commonly associated with adverse extrapyramidal side effects (Peluso et al. 2012).

There are numerous physical health conditions that may present with psychiatric manifestations. An acute confusional state with psychotic symptoms may result from infectious diseases, metabolic disturbances, electrolyte derangements and illicit drug use (Miyoshi & Morimura 2010). Where as organic brain disorders, such as space-occupying lesions, can cause psychotic symptoms. Therefore, it is essential to exclude any organic causes when patients present with psychiatric symptoms. Reports suggest that between 6 to 20% of patients with physical health problems are mis-diagnosed as having mental health disorders (Koran et al. 1989, Koranyi 1979), highlighting the need for caution as mis-diagnosis can have serious consequences.

The Royal College of Psychiatrists (UK) recommend that psychiatrists should assess the physical health of their patients by taking a medical history, performing physical examinations and referring patients appropriately to other specialties, thus enabling psychiatric patients to receive the same standard of healthcare as other citizens. In addition, a thorough physical examination is good practice for all patients undergoing admission to a mental health unit (Royal College of Psychiatrists 2009).

Medication errors are a common cause of avoidable morbidity in the mental health setting. The risk of these errors occurring is increased when patients are transferred between clinical teams. As such, medicines reconciliation is essential to ensure that no discrepancy exists between medicines prescribed before admission and those prescribed on admission. This necessitates the need for a review of medicines prior to any patient admission.

This project aimed to improve compliance with a set standard stating that all patients must undergo a physical health assessment and medicines reconciliation at the point of admission to an acute mental health unit; based on a combination of national (Royal College of Psychiatrists 2009) and local policies (Baxendale 2016)

## SUBJECTS AND METHODS

The medical notes for all current patients at our local mental health unit were reviewed by two foundation doctors for documented evidence of a completed physical assessment and medicines reconciliation form. This was done at three different time points: baseline, 2 months after the introduction of recommendations (defined as the 1<sup>st</sup> intervention) and 2 months later when an online system of record keeping was trialled (defined as the 2<sup>nd</sup> intervention). The quality of completed medicine reconciliation forms was also assessed. All patient data was anonymised.

The physical assessment involved completing a proforma with the results of the following: general observations (height, weight, body mass index (BMI)), physical observations and a full cardiovascular, respiratory, gastrointestinal and neurological examination. The assessment also included performing an electrocardiogram (ECG), obtaining and documenting bloods for the following tests: full blood count, urea and electrolytes, liver function tests, thyroid function tests, vitamin B12 and folate, prolactin, bone profile, HbA1c, C-reactive protein and cholesterol.

During the collection of data at baseline, the reasons for poor compliance with the standard were considered. These included new patients recently discharged from hospital who were admitted to the mental health unit without being assessed by a doctor, difficulty in obtaining a chaperone and doctors being unaware of the medicines reconciliation process.

Therefore, the following recommendations for improvement were made: initiation of specific clinics twice weekly for physical assessments (when at least two doctors were present so that one could act as a chaperone), education for the doctors about the medication reconciliation process with an emphasis placed on the admitting doctor to complete this, and creation of a handover document detailing the process so that subsequent doctors who rotate onto the job were aware of the process.

After implementation of the first intervention, the notes were then re-audited with the current doctors. Following this, new doctors then rotated on to the mental health unit and a new system was trialled (defined as the 2<sup>nd</sup> intervention). An online spreadsheet was created with all current patients, listing those who had undergone physical health assessments and medicines reconciliation. This was made available to all doctors and nursing staff via an encrypted, shared

folder. The notes were then re-audited two months following this intervention.

## RESULTS

The results of the study are reported below (Table 1).

Of the 33 patients at baseline, 16 (49%) had had a physical assessment completed, 15 (46%) had an ECG and 17 (52%) had blood tests results documented. Four (12%) had a completed medicines reconciliation form completed of which two (50%) had the information source completed and three (75%) had the allergy status documented.

Following the 1<sup>st</sup> intervention, the re-audit found 18 (55%) had a physical assessment completed, 20 (61%) had an ECG and 22 (67%) had blood tests results documented. Twelve (36%) had a completed medicines reconciliation form of which 5 (42%) had the information source completed and 10 (83%) had the allergy status documented.

These findings were presented at the weekly multidisciplinary team meeting. Following this a further recommendation was suggested to include components of the physical health assessment and medicines reconciliation as a checklist on a proforma at the front of each patient's notes. This was trialled by the doctors but was deemed ineffective as excess time was often spent looking through individual patient notes.

After the introduction of new doctors to the mental health unit, an online spreadsheet was trialled. Following this 2<sup>nd</sup> intervention, the re-audit (n=31) found 25 (81%) had a physical assessment completed, 25 (81%) had an ECG and 23 (74%) had blood tests results documented. 23 (74%) had a completed medicines reconciliation form completed of which all 23 (100%) had the information source completed (GP: n=17, repeat slip: n=3, case notes: n=3) and 7 (30%) had the allergy status documented.

## DISCUSSION

This quality improvement project examined whether physical health assessments and medicines reconciliation are undertaken in accordance with the standard.

At baseline, the reasons for poor compliance were largely based around logistics and education. These were reflected in the first intervention. These recommendations slightly improved compliance with the standard. Compared to baseline, there was a 15% increase in documentation of blood test results and a 24% increase in the completion of a medicines reconciliation form. However, despite the first intervention, 45% of patients did not undergo a physical assessment and over 70% patients had no medicines reconciliation. The lack of patients undergoing physical assessments may be related to staffing issues at the time and the persistent lack of available chaperones.

**Table 1.** Proportion of patients undergoing physical health assessment and medicines reconciliation

	Baseline (n=33)	1 <sup>st</sup> intervention (n=33)	2 <sup>nd</sup> intervention (n=31)
Physical assessment	16 (49%)	18 (55%)	25 (81%)
ECG	15(46%)	20 (61%)	25 (81%)
Blood test	17 (52%)	22 (67%)	23 (74%)
Medicine reconciliation	4 (12%)	12 (36%)	23 (74%)
*Information source	2 (50%)	5 (42%)	23 (100%)
*Allergy status	3 (75%)	10 (83%)	7 (30%)

\*Reported as a proportion of those who underwent a medicine reconciliation

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Following the introduction of the 2<sup>nd</sup> intervention, there was a significant improvement in compliance with the standard. 81% of patients underwent a physical assessment and ECG, whereas 74% of patients had their blood test results documented and a completed medicines reconciliation form. The improvement in compliance was likely related to the ease of access of the online spreadsheet. In addition, this spreadsheet enabled a clear record of all patients to be listed, identified those with remaining tasks to complete and thus facilitated the regular update of a job list.

Though the spreadsheet appeared to improve compliance with the standard, only 30% of completed medicine reconciliation forms had allergy status documented. This represented a reduction compared to baseline (75%) and a reduction compared to when the first recommendations were introduced (83%). This may reflect a change in medical practice as new doctors had rotated to the mental health unit when the spreadsheet was introduced. It may be that these doctors did not complete allergy status on the medicines reconciliation form as this is often found on the admission summary documentation. This highlights the need for a detailed handover summary of a doctor's role to be passed on to new medical practitioners joining the mental health unit to standardise practice.

## Limitations

The data used in this quality improvement study was collected over three different time periods. As such, it was difficult to control for potential confounding factors such as staffing levels and variations in workload.

New doctors had rotated on to the mental health unit. This may have introduced a different standard of medical practice which may have confounded the results of the different interventions.

## CONCLUSIONS

The completion of physical health assessments and medicines reconciliation forms are important aspects of a patient's care within a mental health unit. The above measures have improved the quality of practice at a local, acute mental health unit. However, further work is required to improve the documentation of allergy status on the medicines reconciliation form.

**Acknowledgements:** None.

**Conflict of interest:** None to declare.

### Contribution of individual authors:

Arani Vivekanantham and Abdur-Raof Sheikh made substantial contributions to the project conception and design.

Arani Vivekanantham, Abdur-Raof Sheikh and Hisham Omer made substantial contributions to the acquisition of data.

All authors made substantial contributions to the analysis and interpretation of data, drafting of the article/revising it critically for important intellectual content and approved the final manuscript.

## References

1. Baxendale L: *Procedure for Medicines Reconciliation on Admission to Inpatient Units (V6)*. Coventry and Warwickshire Partnership NHS Trust 2016.
2. De Hert M, Detraux J, van Winkel R, Yu W & Correll C. U: *Metabolic and cardiovascular adverse effects associa-*

- ted with antipsychotic drugs. *Nature Reviews Endocrinology* 2011; 8:114–126.
3. Koran L, Sox HC Jr, Marton KI, Moltzen S, Sox CH, Kraemer HC et al: Medical evaluation of psychiatric patients: I. Results in a state mental health system. *Archives of General Psychiatry* 1989; 46(8), 733–740.
  4. Koranyi EK: Morbidity and rate of undiagnosed physical illnesses in a psychiatric clinic population. *Archives of General Psychiatry* 1979; 36(4), 414–419.
  5. Miyoshi K & Morimura Y: *Neuropsychiatric Disorders*. Springer Books, Tokyo Dordrecht Heidelberg London New York, 2010.
  6. Osborn DPJ, Nazareth I & King M: Risk for coronary heart disease in people with severe mental illness: Cross-sectional comparative study in primary care. *The British Journal of Psychiatry* 2006; 188(3), 271–277.
  7. Peluso MJ, Lewis SW, Barnes TRE & Jones PB: Extrapyramidal motor side-effects of first and second-generation antipsychotic drugs. *British Journal of Psychiatry* 2012; 200(5), 387–392.
  8. Robson D & Gray R: Serious mental illness and physical health problems: A discussion paper. *International Journal of Nursing Studies* 2007; 44(3), 457–466.
  9. Royal College of Psychiatrists; OP67 Physical health in mental health 2009; 1–72.
  10. Thornicroft G: Physical health disparities and mental illness: The scandal of premature mortality. *British Journal of Psychiatry* 2011; 199(6), 441–442.
  11. Wenzel-Seifert K, Wittmann M & Haen E: QTc prolongation by psychotropic drugs and the risk of Torsade de Pointes. *Deutsches Arzteblatt International* 2011; 108(41), 687–93.

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