The Time is Now for Mental Health Care: Evaluating the Impact of a Clinical Pharmacist on an Acute Mental Health Unit

Amy Soubolsky and Katelyn Halpape

Can J Hosp Pharm. 2022;75(4):317-25 https://doi.org/10.4212/cjhp.3210

ABSTRACT

Background: Clinical pharmacists have a significant role in optimizing pharmacotherapy for patients admitted to acute care settings. Patients with mental health disorders are especially vulnerable to polypharmacy, adverse drug effects, medication nonadherence, and misconceptions about medication use. The Royal University Hospital in Saskatoon, Saskatchewan, currently lacks resources to provide optimal clinical pharmacy coverage for mental health inpatients.

Objectives: To determine the optimal clinical role for a pharmacist providing specialized care to mental health inpatients and to evaluate the potential impact of the pharmacist on medication use and patient care.

Methods: A pharmacist with 5 years of mental health–related pharmacy practice experience was temporarily assigned to the Mental Health Short Stay Unit as a practical component of a Master's program in pharmacy. Clinical activities to be completed by the pharmacist were defined on the basis of available evidence, existing performance and quality assurance indicators, and prior experience. The pharmacist's activities and recommendations during each shift were tracked and reported.

Results: The pharmacist saw 94 patients over a total of 88 hours. The pharmacist made a total of 61 recommendations, of which 55 (90%) were accepted by the psychiatrist, and initiated 42 medication changes. Forty-one patients (44%) received a thorough medication assessment, and individualized, often specialized, education was provided to patients 39 times. The pharmacist was consulted by the psychiatrist 19 times.

Conclusions: Pharmacists have an important role in medication management and patient education for psychiatric inpatients, and the health care team values pharmacists' unique expertise. Additional resources dedicated to defining and expanding clinical pharmacy services on inpatient psychiatry units could further optimize patient care.

Keywords: mental health, clinical pharmacy, pharmacy services, psychiatric inpatients, medication management

RÉSUMÉ

Contexte : Les pharmaciens cliniciens jouent un rôle important dans l'optimisation de la pharmacothérapie pour les patients admis en milieu de soins aigus. Les patients souffrant de troubles de la santé mentale sont particulièrement vulnérables à la polypharmacie, aux effets indésirables des médicaments, au non-respect de la médication et aux idées fausses circulant sur leur utilisation. L'hôpital Royal University, à Saskatoon (Saskatchewan), manque actuellement de ressources pour offrir une couverture pharmaceutique clinique optimale aux patients hospitalisés en santé mentale.

Objectifs : Déterminer le rôle clinique optimal du pharmacien fournissant des soins spécialisés aux patients hospitalisés en santé mentale et évaluer son impact potentiel sur l'utilisation des médicaments et les soins aux patients.

Méthodes : Un pharmacien ayant 5 ans d'expérience dans la pratique de la pharmacie liée à la santé mentale a été temporairement affecté à l'unité de séjours de courte durée en santé mentale dans le cadre de la composante pratique d'un programme de maîtrise en pharmacie. Les activités cliniques qu'il devait réaliser ont été définies sur la base des données probantes à disposition, des indicateurs de performance et d'assurance de la qualité existants, ainsi que sur la base de son expérience antérieure. Les activités et les recommandations du pharmacien au cours de chaque quart de travail étaient suivies et signalées.

Résultats : Le pharmacien a visité 94 patients sur un total de 88 heures. Au total, il a fait 61 recommandations, dont 55 (90 %) ont été acceptées par le psychiatre, et il a amorcé 42 changements de traitement. Quarante et un patients (44 %) ont reçu une évaluation approfondie concernant le traitement, et des patients ont reçu une explication individualisée, souvent spécialisée, 39 fois. Le psychiatre a consulté le pharmacien 19 fois.

Conclusions : Les pharmaciens jouent un rôle important dans la gestion des médicaments et l'éducation des patients hospitalisés en psychiatrie, et l'équipe de soins de santé apprécie leur expertise unique. Des ressources supplémentaires consacrées à la définition et à l'élargissement des services de pharmacie clinique dans les unités de psychiatrie pour patients hospitalisés pourraient optimiser davantage les soins aux patients.

Mots-clés : santé mentale, pharmacie clinique, services de pharmacie, patients hospitalisés en psychiatrie, gestion des médicaments

INTRODUCTION

Mental illness affects as many as 1 in 5 North Americans each year.[1,2] The incidence of mental illness has been increasing in recent years, and the complexity of mental health care and an associated call to action have been gaining much attention in multiple spheres of society.[3-5] Clinical pharmacists can have a significant role in providing care to people living with mental illness and play an important part in patients' journeys to recovery. In particular, pharmacists are experts in identifying drug therapy problems, resolving medication discrepancies, providing patient education, and making recommendations to optimize pharmacotherapy for patients admitted to acute care settings. Patients with mental health disorders are especially vulnerable to polypharmacy, adverse drug effects, and misconceptions about medication use.[6,7] There is also a high rate of medication nonadherence among patients taking psychotropic medication, which can be improved by pharmacists providing education and/or performing various interventions.[6-8] Involvement of pharmacists in mental health care has been shown to improve safe and effective medication use, reduce hospitalizations, decrease costs, improve adherence, and increase patient satisfaction.[6-12]

The complex and sensitive nature of mental health disorders, combined with the ambiguity of clinical psychiatric practice guidelines, often requires that clinicians have specialized knowledge and skills to have the greatest impact in this practice area. To meet this need, the Board of Pharmacy Specialties (US) has recognized psychiatric pharmacists since 1992, and the American Association of Psychiatric Pharmacists (formerly the College of Psychiatric and Neurologic Pharmacists) advocates internationally for specialized certification and provides high-level education to support pharmacists in this area.[13-15] Evidence suggests a greater degree of positive health outcomes and patient satisfaction when the foundational skills of pharmacists are coupled with training and expertise in mental health.[15,16]

Despite the complex treatment and medication management needs of psychiatric inpatients, the increasing prevalence of mental health disorders, and the known impact of pharmacists, clinical pharmacy services for this patient population are often suboptimal. For example, the 2016/17 Hospital Pharmacy in Canada Survey revealed that only 65% of inpatient mental health programs had a dedicated pharmacist.[17] The Royal University Hospital is a tertiary teaching hospital in an urban centre (Saskatoon, Saskatchewan). One of the acute psychiatric units is the Mental Health Short Stay Unit. This unit has 7 beds for adults needing acute mental health care, has an average length of stay of 7 days, and operates at full capacity most of the time. The patient population has primarily consisted of people with acute psychosis, mood disorders, and substance use disorders, with high rates of suicidal ideation and psychosocial stressors. There was no clinical pharmacist coverage for the Mental Health Short Stay Unit before this pilot project, except for urgent consultations for high-risk patients. All pharmacy services were provided through the centralized hospital pharmacy order entry and medication distribution system. Inpatient psychiatrists provided coverage to the Mental Health Short Stay Unit on a rotating basis.

To address unmet patient needs at the Royal University Hospital, and to conduct an initial exploration of the value and feasibility of increased clinical pharmacy coverage for psychiatric inpatients, a clinical pharmacist with experience in mental health was temporarily assigned to the Mental Health Short Stay Unit as a practical component of a Master's program in pharmacy. The researchers sought to answer the following questions: What clinical services can be offered, and how might they affect optimization of medication use and create opportunities to provide patient-centred care? More specifically, the study objective was to determine the optimal clinical role for a pharmacist providing specialized care to mental health inpatients and to evaluate the potential impact of the pharmacist on medication use and patient care.

METHODS

A pharmacist (A.S.) with 5 years of mental health–related pharmacy practice experience was scheduled to work on the Mental Health Short Stay Unit on Wednesday and Friday mornings, from 0800 to 1200 (noon), between September 16, 2020, and April 9, 2021 This single-centre pilot project involved the provision of comprehensive pharmaceutical care to psychiatric inpatients, prospective data collection, and data analysis using descriptive statistics. The frequency of provision of various mental health clinical activities was reported, medication- and patient-related outcomes of these interventions were described, and the potential for associated impact was determined by extrapolating from the existing literature. Because this study involved evaluation of a quality improvement program, rather than systematic research, ethics approval was not required.

The clinical activities of the mental health pharmacist were identified and prioritized on the basis of available evidence, expert consultation, professional judgment, and prior experience. The descriptions of clinical activities were adapted from the Canadian Society of Hospital Pharmacists' consensus guideline,[18] established pharmacy quality metrics,[19] and existing activity tracking used by the Royal University Hospital general pharmacists. Data collection during the first term (September to December 2020) served as a preliminary phase to track various activities completed by the mental health clinical pharmacist, and there was an ongoing attempt to define appropriate metrics and document related patient impact. Medication discrepancies with potential for patient harm were defined as those that could

cause significant morbidity or mortality, either acutely or chronically, as determined by the clinical pharmacist (e.g., long-term medical or psychiatric medication not ordered on admission or ordered at a dose different from the outpatient prescription). Cases were discussed after each shift with the supervising Board-certified psychiatric pharmacist (K.H.), and the therapeutic care process and prioritization of activities were regularly reviewed for improvement.

In December 2020, the initial data were thoroughly evaluated by the authors (i.e., the clinical pharmacist and the supervising pharmacist), pharmacy directors and clinical managers were consulted, and further adjustments were made in selecting and defining the clinical activities to be performed and focusing the documentation process. This process led to a defined list of clinical activities for the mental health pharmacist (Table 1) and a corresponding tracking tool (Figure 1). During the second term (January to April 2021), the tracking tool was used to document the specific clinical activities performed during each shift. The data were recorded in an Excel spreadsheet (Microsoft Corporation), and the frequency of occurrence of each clinical activity was totalled for each month and for the entire term. Additional information pertaining to individual activities was also recorded (Figure 1). This report focuses on the data collected during the second term.

RESULTS

Patient Care and Data Summary

From January to April 2021, the clinical pharmacist spent a total of 88 hours on the Mental Health Short Stay Unit, which consisted of 23 shifts with an average time of 3.8 hours per shift. Ninety-four patients were seen over these 23 shifts, with an average of 4 patients seen per shift. During the 4-month study period, at least 37 patients requiring admission assessment or subsequent follow-up were not seen by the clinical pharmacist because of a lack of time. Patients were prioritized on the basis of input from the psychiatrist and assessment of level of acuity and complexity by the pharmacist. Additionally, every patient who was admitted was targeted for at least a basic medication reconciliation.

Individual mental health clinical activities were performed a total of 131 times. The frequency of occurrence of each activity is summarized in Figure 2. The most frequent activities were the provision of education (39 times) and medication reconciliation on admission (34 patients). From the sample of 94 patients, 23 (24%) received a medication assessment as a part of the medication reconciliation, an additional 18 (19%) received a comprehensive medication assessment (CMA), and 39 (41%) were provided with individualized and often psychiatric-specific education; these 3 categories of activity are described in more detail in the following sections. The pharmacist was consulted 19 times to perform medication assessments.

In connection with the focused clinical activities, the pharmacist made a total of 61 medication- or monitoring-related recommendations (Figure 3), including 38 recommendations as a result of CMAs and an additional 19 as a result of medication reconciliation. There was an overall recommendation acceptance rate of 90% (55/61), and a total of 42 documented medication changes were initiated by the pharmacist. In particular, 12 medications were eliminated because they were deemed to be unnecessary or had risks that outweighed their benefits. More than half (57%) of the

TABLE 1. Definitions of Clinical Activities for Mental Health Pharmacists

Clinical Activity	Definition
Medication reconciliation on admission	Performing medication reconciliation, including best possible medication history, reconciliation with current orders, and brief review for appropriateness
Medication reconciliation on admission with medication assessment	Performing medication reconciliation on admission with additional comprehensive medication assessment (as defined below)
Medication reconciliation on transfer/discharge	Ensuring completeness of discharge prescription, including reconciliation with preadmission medications
Discrepancies resolved on medication reconciliation	Resolving unintentional discrepancy between medication orders at transfers of care (e.g., outdated dosing instructions, missing medications, medication listed when patient no longer taking)
Seamless care activities	Ensuring required coverage (i.e., exceptional drug status) is in place; performing written/verbal transfer of care
Pharmacy consult requested by psychiatrist	Responding to psychiatrist's request to review medication history and current medications and/or to provide recommendations for adjusting pharmacotherapy
Education provided to patient during hospital stay or at discharge	Providing education to patient about mental health diagnosis, medication, or substance use (either proactively or in response to patient questioning)
Comprehensive medication assessment	Performing deeper review of past medication/psychiatric history, with thorough assessment for optimization of efficacy and safety (including incorporation of patient views where possible)

recommendations resulted in changing to a more suitable dose or formulation to improve efficacy or safety.

Medication Reconciliation on Admission

Of the 34 medication reconciliations completed on admission (with or without further assessment), 11 revealed one or more discrepancies; of these, 2 could have resulted in patient harm (Table 2). Of the 23 medication reconciliations completed on admission with a subsequent medication assessment, 18 had an impact through resolution of discrepancies that could have resulted in patient harm, provision of potentially behaviour-changing education, or identification of drug therapy problems that led to further assessment and intervention. Only 11 of the medication reconciliations on admission were done without taking a more detailed history or doing a more thorough assessment, either because of

Date: _____

ACTIVITY	QUANTITY	TIME SPENT/COMMENTS
Number of patients seen		
Number of patients missed		On admit: ____ For potential education or review: ____ For follow up: ____
Med Rec on admission		# having ≥ 1 minor discrepancy: ____ *(discrepancy that would likely not result in harm)* Time spent on each: ____
Med Rec on admission with medication assessment		# having impact: ____ *(≥ 1 discrepancy that could have resulted in patient harm, resulted in potentially behaviour changing education, identified drug therapy problems)* # with interventions or education requiring specialized psychopharmacology knowledge*: ____ Time spent on each: ____
Med Rec on transfer/discharge		
Discrepancies resolved on med rec		
Seamless care activities		Written transfer of care: ____ Verbal transfer of care: ____ Obtained outpatient medication coverage: ____ Additional coverage support: ____
Pharmacist consult requested by psychiatrist		
Education provided to patient during hospital stay		General: ____ Specialized*: ____
Education provided to patient at discharge		General: ____ Specialized*: ____ Medication list or calendar provided: ____
Comprehensive medication assessment (CMA)		# done because of consult: ____ # resulted in ≥ 1 recommendations: ____ # requiring specialized psychopharmacology knowledge*: ____ Time spent on each: ____

	Specific Recommendations	Quantity	From Med Rec or CMA	Accepted/Resolved
Medication Related	Recommended additional medication			
	Recommended dose change			
	Recommended deprescribing			
	Recommended alternative medication			
Monitoring Related	Recommended therapeutic drug monitoring			
	Recommended lab monitoring			

*Examples:

FIGURE 1. Mental health pharmacist clinical activity tracking tool. CMA = comprehensive medication assessment, Med Rec = medication reconciliation.

time constraints or because the patient had a simple medication history and regimen.

Comprehensive Medication Assessment

The clinical pharmacist performed a CMA for 18 of the patients (Table 3). Thirteen of the CMAs were done following a psychiatrist consult, and the rest were undertaken by the Mental Health Short Stay Unit clinical pharmacist at the time of admission based on a possibility of benefit or potential harm. Of all the CMAs completed, 13 led to at least one recommendation, and a total of 38 recommendations were made. A significant amount of the pharmacist's time was spent performing CMAs, with an average of 76 minutes per patient for the initial assessment, interview, and documentation. Many of these patients also required ongoing follow-up. Data for CMAs primarily reflected

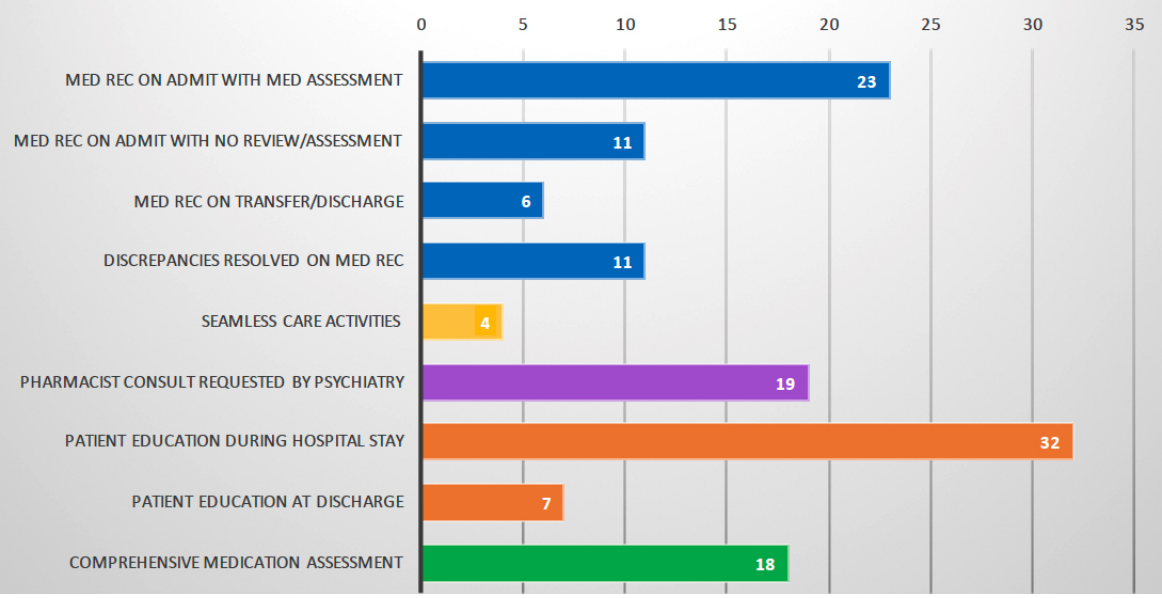

FIGURE 2. Mental health pharmacist clinical activities and the frequency of occurrence.

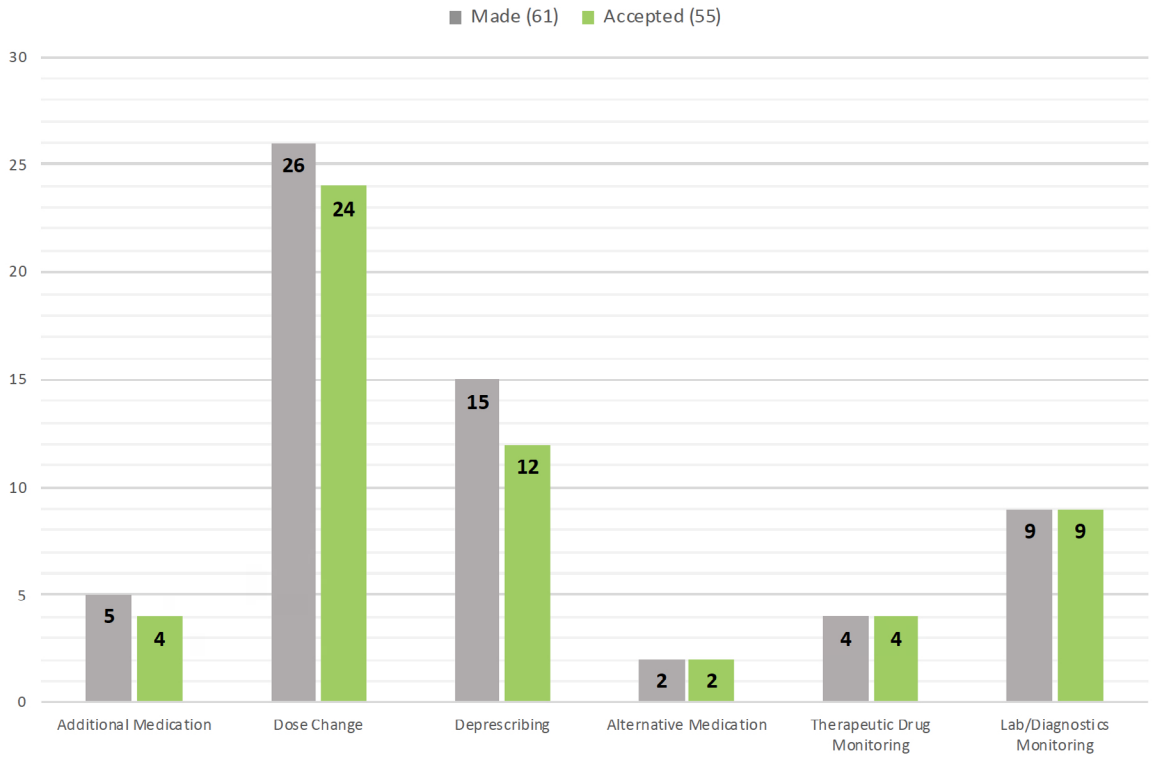

FIGURE 3. Clinical pharmacist's recommendations.

TABLE 2. Analysis of Medication Reconciliations

Characteristic	No. (%) of Medication Reconciliations
Total no. completed	34 (100)
No. with assessment	23 (68)
No. with potential impact	18 (53)
No. with ≥ 1 discrepancy	11 (32)
No. with potential for harm	2 (6)

TABLE 3. Analysis of Comprehensive Medication Assessments (CMAs) and Recommendations

Characteristic	No. (%)
CMAs	
Total no. completed	18 (100)
No. initiated after psychiatrist requested consult	13 (72)
No. with ≥ 1 recommendation	13 (72)
Recommendation summary	
Total no. of recommendations	38 (100)
No. of recommendations accepted	34 (89)

activities independent of medication reconciliation with assessment, although there were some instances of overlap.

Provision of Patient Education

Education about mental health diagnosis, medications, or substance use was provided to patients 39 times. Medication education usually included information about the indication, mechanism of action, and expected onset/magnitude of benefits of the prescribed drug, along with an explanation of risks and adverse effects and information about proper administration and self-management. Many discussions with patients involved informing them about the negative effects of substance use (especially involving alcohol and cannabis) on mental health; some of these patients stated that they had never been cautioned sufficiently in the past. Other discussions provided an opportunity for shared decision-making after the patients were informed of their most promising medication options and common adverse effects. Patients often had questions about what their medications were being used for, and they shared feelings of concern or frustration because of the lack of information given to them previously. Education and support were consistently provided to encourage medication adherence and to empower patients to manage their care on discharge.

Mental Health Pharmacy Specialization

Using professional judgment, the clinical pharmacist determined that 39% (9/23) of the medication reconciliations with assessments, 89% (16/18) of the CMAs, and 51% (20/39) of the instances of provision of education required specialized mental health knowledge. Examples of the specialized mental health care provided by the pharmacist are listed in Box 1.

DISCUSSION

The various clinical activities performed and documented in this study provide insight into the positive impact that a clinical pharmacist can have on an acute mental health unit. One of the key findings that highlights the need for and value of a pharmacist on the interdisciplinary mental health team within the Mental Health Short Stay Unit is the number of recommendations resulting from medication assessments and the high rate of acceptance of recommendations by the most responsible physician. The seamless integration of the pharmacist into the interdisciplinary team was also apparent. During the 23 shifts when the pharmacist was present, the attending psychiatrists formally consulted pharmacy 19 times to request pharmacotherapy recommendations. The number of consultations requested by individual psychiatrists increased with the duration of the psychiatrist's assignment to the unit, indicating the development of trust and a professional alliance with the pharmacist. In addition to the clinical activities recorded on the tracking form, the pharmacist had numerous conversations with the psychiatrist or the patient to assess the efficacy and safety of the current medication regimen or to offer considerations for future medication adjustments.

The process of medication reconciliation on admission often functioned as the gateway to medication assessments,

BOX 1. Examples of Specialized Mental Health Care Provided by Pharmacist

- Shared decision-making based on individualized risk versus benefit of lithium
- Optimizing doses of antidepressants to target specific, most distressing symptoms
- Responding to patients' concerns and questions related to their mental health diagnosis and treatment
- Discussing overall mental health risks of cannabis use and motivational interviewing to improve lifestyle
- Performing comprehensive, evidence-based evaluations of psychotropic medications followed by appropriate deprescribing
- Initiating appropriate medication for alcohol use disorder based on patient preference and willingness to change
- Providing psychotropic medication–related education and support to newly practising psychiatrists and nursing staff upon request
- Ensuring safe use of medications during electroconvulsive therapy
- Screening for antipsychotic-induced movement disorders and other adverse effects, and implementing appropriate management strategies

patient education, and therapy recommendations, which highlights the importance of having a pharmacist available to review all patients' medication therapy on admission. Many encounters that began with the intention of only completing the medication reconciliation uncovered a need or opportunity to perform a more thorough assessment (23/34 [68%]) or to provide education to the patient (19/34 [56%]). Given the sensitive nature of psychiatric care, each interaction is an opportunity to build rapport with the patient and thereby to facilitate the development of a relationship in which the patient is comfortable disclosing information related to their medical and medication history and is open to hearing educational information. Additionally, the high rate of consequential impact, through the resolution of drug-related issues or the provision of education, underscores the necessity of performing medication reconciliation on admission for patients who are taking psychiatric medications. This finding is in alignment with the literature and health system priorities, and it supports medication reconciliation as a primary clinical role for pharmacy professionals. It may also suggest that for this patient population, this role is best served by a pharmacist, rather than a pharmacy technician. Furthermore, because the Mental Health Short Stay Unit pharmacist had experience in psychiatric pharmacy and was obtaining advanced mental health pharmacy training as part of a Master's program in pharmacy, the medication reviews were often more advanced than what would be expected of a pharmacist with an entry-to-practice degree without specialized mental health training and experience. With increased specialization in the area of mental health, pharmacists can provide more comprehensive and individualized patient care, as well as give valuable support to other health care professionals.

Although neither patients nor psychiatrists were formally asked for feedback or assessed for behaviour change, available evidence combined with clinical impressions of these patient interactions suggests that the provision of these pharmacy services positively contributed to patient care and the overall health care system.[6-8,10,12] In particular, it has been established that comprehensive medication management by clinical pharmacists improves clinical and humanistic outcomes, and it is the gold standard for Board-certified pharmacists.[8,10-12,15,20] Controlled trials have revealed that pharmacists' provision of medication education improves adherence, psychiatric symptoms, scores on the Clinical Global Impression scale, and patient satisfaction.[12,20,21] Observational studies of pharmacists' involvement in the care of patients with mental illness have shown rates of identified medication-related issues and accepted recommendations that are consistent with the findings presented here.[11,22] Specifically supporting the impact of pharmacist education, 2 meta-analyses[23,24] have reported pooled odds ratios of 2.50 and 1.64, respectively, for patients remaining adherent to antidepressant therapy 6 months after receiving pharmacist education and monitoring relative to those who received no pharmacist intervention. Based on existing literature about the impacts of pharmacists in providing care for patients with mental health conditions, the clear value of and appreciation for the pharmacist on this unit's interdisciplinary team was not surprising and reveals an urgent need for pharmacists to be assigned to these teams.

It is important to acknowledge that a minimum of 37 patients were not seen by the pharmacist because of time constraints. With a full-time pharmacist designated to the acute mental health unit, a conservative estimate based on the data collected would propose that for each 8-hour shift, all of the patients (n = 7) could be seen by the pharmacist, all required medication reconciliations on admission could be completed, and CMAs could be completed for 2 or 3 patients. With increased pharmacist time, the disproportionate lack of seamless care activities, including medication reconciliation on discharge and transfer, could also be addressed. While this may seem a low target relative to other medical specialties and acute care staffing ratios, the complexity of patient characteristics and drug regimens in this population must be considered.

There are several limitations to the evaluation and application of these data. The clinical activities captured were not formally validated, and the exact definitions and their application were adjusted slightly throughout the term. In particular, there was overlap between the categories of medication reconciliation, medication reconciliation with assessment, and CMA. However, care was taken to not double-count activities that fell within 2 overlapping categories. The data collected likely under-represent the number of clinical activities completed, as it can be difficult within a fast-paced environment to track every intervention within the provision of care and to categorize it precisely and consistently. Admittedly, the pharmacist's recommendations do not automatically correlate with patient or health system benefit, particularly in the area of psychiatry, where the rationale for and outcomes of drug therapy can have high subjectivity and variability.[25-27] Furthermore, although many attempts have been made to establish optimal, consistent methods for economic analysis and evaluation of patient outcomes, this has proven to be a difficult and resource-intensive undertaking.[28-31] It is necessary to recognize that patient impact cannot be objectively proven with these data, given that patient outcomes were not assessed, and there was no control group or baseline analysis; furthermore, the findings of this study may not be generalizable to other pharmacists or sites. There is a need for future studies to attempt to address these limitations by measuring benefit in validated ways (i.e., through the use of clinical scoring tools), categorizing clinical activities consistently and in close concordance with existing evidence, and incorporating the patient voice.

CONCLUSION

This report provides a timely example of clinical activities that can be performed by a pharmacist for mental health inpatients and an initial evaluation of a specialized clinical pharmacist's impact on medication use and patient care on an acute mental health unit. Consistent with the available literature, it is clear that clinical pharmacists have an important role in patient care through individualized medication optimization, the provision of meaningful education, and ongoing monitoring. In particular, having a pharmacist available for reconciling medications and responding to consults can provide immediate value to the interdisciplinary team. The extent of patient and health system benefit, the economic significance of short- and long-term patient outcomes, and the value threshold for input costs remains largely unknown. More work is needed to answer these questions and, subsequently, to identify core clinical activities and educational requirements for pharmacists covering acute mental health units (Box 2). Information about patients' attitudes and experiences following encounters with a pharmacist would also be valuable to help shape future directions for clinical pharmacy services in the area of mental health.

BOX 2. Future Needs and Considerations for Standardizing Clinical Pharmacy Services in Mental Health

- Evaluate existing literature and perform additional studies to better define clinical activities, core services, and measurable outcomes for clinical pharmacists working in acute inpatient psychiatry.
- Undertake qualitative and quantitative research regarding the role of clinical pharmacists in acute inpatient psychiatry that incorporates patient satisfaction and their perceptions related to quality of life.
- Explore innovative and cost-effective strategies for sustainable resource allocation for inpatient mental health pharmacy services, which align with national and international pharmacy staffing ratios.
- Continue advocacy efforts among health care professionals and the public to demonstrate the role of clinical pharmacists in mental health care.

References

1. *Making the case for investing in mental health in Canada*. Mental Health Commission of Canada; 2013 [cited 2021 Jul 6]. Available from: https://www.mentalhealthcommission.ca/sites/default/files/2016-06/Investing_in_Mental_Health_FINAL_Version_ENG.pdf
2. Statistics: mental illness. National Institute of Mental Health (US); 2013 [cited 2021 Jul 6]. Available from: https://www.nimh.nih.gov/health/statistics/mental-illness
3. Slaughter G. Anxiety and depression have spiked among Canadians: survey. *CTVNews* [newspaper on Internet]. 2020 Apr 30 [cited 2021 Jun 15]. Available from: https://www.ctvnews.ca/health/coronavirus/anxiety-and-depression-have-spiked-among-canadians-survey-1.4919741
4. Winder FS, commissioner. *Working together for change: a 10 year mental health and addictions action plan for Saskatchewan*. Government of Saskatchewan; 2014 Dec. Available from: https://www.saskatchewan.ca/government/news-and-media/2014/december/01/mental-health-action-plan
5. Bartram M, Chodos H. Changing directions, changing lives: the mental health strategy for Canada. *Can J Community Mental Health*. 2013; 32(4):1-8.
6. Goldstone LW, DiPaula BA, Caballero J, Park SH, Price C, Slater MZ. Improving medication-related outcomes for patients with psychiatric and neurologic disorders: value of psychiatric pharmacists as part of the health care team. *Ment Health Clin*. 2015;5(1):1-28.
7. Millonig MK. White paper on expanding the role of the community pharmacist in managing depression. APhA Foundation; 2009 [cited 2021 Mar 15]. Available from: https://www.aphafoundation.org/sites/default/files/ckeditor/files/WhitePaper-PharmacistRoleManagingDepression-APhAFoundation-2009(1).pdf
8. Kaboli PJ, Hoth AB, McClimon BJ, Schnipper JL. Clinical pharmacists and inpatient medical care: a systematic review. *Arch Intern Med*. 2006;166(9):955-64.
9. Kassir H, Eaton H, Ferguson M, Procter NG. Role of the pharmacist in suicide prevention: primely positioned to intervene. *J Pharm Pract Res*. 2019;49(6):567-9.
10. Thomas JE, Caballero J. Impact of pharmacists in mental health over the past decade. *Ment Health Clin*. 2012;1(10):252-60.
11. Cobb CD. Optimizing medication use with a pharmacist-provided comprehensive medication management service for patients with psychiatric disorders. *Pharmacotherapy*. 2014;34(12):1336-40.
12. Finley PR, Crismon ML, Rush AJ. Evaluating the impact of pharmacists in mental health: a systematic review. *Pharmacotherapy*. 2003; 23(12):1634-44.
13. Welcome to the Board of Pharmacy Specialties [homepage on Internet]. American Pharmacists Association, Board of Pharmacy Specialties; 2021 [cited 2021 Jun 15]. Available from: https://www.bpsweb.org/
14. About CPNP [webpage on Internet]. College of Psychiatric and Neurologic Pharmacists; c2003-2021 [cited 2021 Jun 15]. Available from: https://cpnp.org/about
15. Stimmel GL. Psychiatric pharmacy. *Am J Health Syst Pharm*. 2013; 70(4):366-7.
16. Goldstone LW, DiPaula BA, Werremeyer A, Botts S, Hepburn B, Liu HY, et al. The role of board certified psychiatric pharmacists in expanding access to care and improving patient outcomes. *Psychiatr Serv*. 2021;72(7):794-801.
17. Hospital Pharmacy in Canada Survey Board. *Hospital pharmacy in Canada report 2016/17*. Canadian Society of Hospital Pharmacists; 2018 [cited 2021 Jun 28]. Available from: https://www.cshp.ca/docs/pdfs/Report%202018.pdf
18. Fernandes O, Toombs K, Pereira T, Lyder C, Bjelajac Mejia A, Shalansky S, et al. Canadian consensus on clinical pharmacy key performance indicators: quick reference guide. Canadian Society of Hospital Pharmacists; 2015 [cited 2021 Aug 12). Available from: https://www.cshp.ca/docs/pdfs/CSPH-Can-Concensus-cpKPI-QuickReferenceGuide_June_2017.pdf
19. *PQA quality measures*. Pharmacy Quality Alliance; 2018 [cited 2021 Jun 15]. Available from: https://www.pqaalliance.org/pqa-measures
20. Canales PL, Dorson PG, Crismon ML Outcomes assessment of clinical pharmacy services in a psychiatric inpatient setting. *Am J Health Syst Pharm*. 2001;58(14):1309-16.
21. Adler DA, Bungay KM, Wilson IB, Pei Y, Supran S, Peckham E, et al. The impact of a pharmacist intervention on 6-month outcomes in depressed primary care patients. *Gen Hosp Psychiatry*. 2004;26(3): 199-209.
22. Bell JS, Whitehead P, Aslani P, McLachlan AJ, Chen TF. Drug-related problems in the community setting: pharmacists' findings and recommendations for people with mental illnesses. *Clin Drug Investig*. 2006;26(7):415-25.
23. Readdean KC, Heuer AJ, Parrott JS. Effect of pharmacist intervention on improving antidepressant medication adherence and depression symptomology: a systematic review and meta-analysis. *Res Social Adm Pharm*. 2018;14(4):321-31.

24. Rubio-Valera M, Serrano-Blanco A, Magdalena-Belío J, Fernández A, García-Campayo J, Pujol MM, et al. Effectiveness of pharmacist care in the improvement of adherence to antidepressants: a systematic review and meta-analysis. *Ann Pharmacother*. 2011;45(1):39-48.
25. Tcheremissine OV, Rossman WE, Castro MA, Gardner DR. Conducting clinical research in community mental health settings: opportunities and challenges. *World J Psychiatry.* 2014;4(3):49-55.
26. Krueger RF, Eaton NR. Transdiagnostic factors of mental disorders. *World Psychiatry*. 2015;14(1):27-9.
27. North CS, Surís AM. Advances in psychiatric diagnosis: past, present, and future. *Behav Sci (Basel).* 2017;7(2):27.
28. Fabian TJ, Montgomery JL. Value proposition for psychiatric pharmacy. *Am J Health Syst Pharm*. 2018;75(8):508-9.
29. *A review of pharmacy services in Canada and the health and economic evidence.* Canadian Pharmacists Association; 2016 Feb [cited 2021 Apr 5]. Available from: https://www.pharmacists.ca/cpha-ca/assets/File/cpha-on-the-issues/Pharmacy Services Report 1.pdf
30. Fisher CE, Spaeth-Rublee B, Pincus HA, Brown P, Rosen A, Durbin J, et al. Developing mental health-care quality indicators: toward a common framework. *Int J Qual Health Care.* 2013;25(1):75-80.
31. Mossialos E, Naci H, Courtin E. Expanding the role of community pharmacists: Policymaking in the absence of policy-relevant evidence? *Health Policy*. 2013;111(2):135-48.

Amy Soubolsky, BSP, was, at the time of writing, a Pharmacist with the Saskatchewan Health Authority, North Battleford, Saskatchewan, and an MSc candidate in the College of Pharmacy and Nutrition, University of Saskatchewan (convocation November 2022). She is now an Information Support Pharmacist with RxFiles, College of Pharmacy and Nutrition, University of Saskatchewan.

Katelyn Halpape, BSP, ACPR, PharmD, BCPP, is Assistant Professor with the College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan.

Competing interests: For activities unrelated to the study reported here, Katelyn Halpape has received honoraria from Hogrefe Publishing for contributions to the 23rd edition of *Clinical Handbook of Psychotropic Drugs*, as well as honoraria for educational presentations from the British Columbia and Saskatchewan branches of the Canadian Society of Hospital Pharmacists (CSHP), the Saskatchewan College of Physicians and Surgeons, and the Pharmacists Association of Saskatchewan. Amy Soubolsky has received honoraria for educational presentations from the Saskatchewan branch of the CSHP. Amy Soubolsky and Katelyn Halpape have served in voluntary positions for the Saskatchewan Branch of CSHP. No other competing interests were declared.

Address correspondence to:
Dr Katelyn Halpape
College of Pharmacy and Nutrition
University of Saskatchewan
2A20.01 Health Sciences
107 Wiggins Road
Saskatoon SK S7N 5E5

email: Katelyn.halpape@usask.ca

Funding: None received (other than operational support, as outlined below).

Acknowledgements: The authors would like to thank Barb Evans of the Saskatchewan Health Authority for clinical and operational support, as well as consultation and review of this manuscript.