

The first wave of COVID-19: The logistics of off-site pharmacy management for a relocated acute psychiatric unit

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The rapid, global spread of coronavirus disease 2019 (COVID-19) has required the mental health community to think creatively about healthcare delivery, with particular challenges posed for inpatient psychiatric settings. In response to these challenges, we temporarily relocated a geriatric inpatient psychiatry unit to a vacant, off-site space at a neighboring state psychiatric hospital approximately 1 mile from our main hospital location, allowing for the creation of an inpatient psychiatric unit within the main hospital facility for patients who tested positive for COVID-19.¹ Numerous legal, staffing, and logistical details were reviewed in preparation of the move. The following is a description of our experience providing pharmacy services to a psychiatric inpatient unit at an off-site location and the lessons we learned along the way.

Medication management to an off-site acute care unit must accomplish 2 basic functions: (1) clinical validation of medication orders and (2) safe and timely administration of medications to patients. Our healthcare system's electronic medical record system allowed for accomplishing the first function with relative ease. However, physically getting medications into the hands of nurses so that they could administer them posed a number of operational, clinical, and regulatory challenges that required thoughtful planning, precise implementation, and persistent oversight. These challenges can best be described as those related to pre- and postimplementation operations.

Preimplementation challenges. A pharmacist with experience with inpatient operations management was assigned to the multidisciplinary project team in charge of facilitating the off-site move. Other multidisciplinary team members included attending physicians, nurse practitioners, nurse managers, department administrators, social workers, and a psychologist. It was critical that the participating pharmacist had a thorough understanding

of inpatient medication processes, Joint Commission medication safety standards, and state and federal regulations to ensure a safe, effective, and compliant pharmacy operation.

It is important to highlight that planning for medication management of an off-site unit must take into account state and federal regulations that may delay or entirely obstruct the ability to supply medications to a remote location. The biggest regulatory hurdle for providing medication management to a remote unit related to controlled substances, as an acute care psychiatric unit would require a limited number of controlled substances, like lorazepam, for both maintenance regimens and psychiatric emergencies. Federal law requires a separate Drug Enforcement Administration (DEA) registration for any site that stores controlled substances, and obtaining a separate DEA registration for this site would have been challenging to do in a timely manner. Fortunately, on April 10, 2020, the United States Department of Justice announced an easing of those requirements in response to the need for many healthcare facilities to open satellite locations due to the COVID-19 pandemic.² These regulation changes allowed us to move forward with planning of the remote unit.

Initial project meetings provided the foundational information needed to initiate medication management planning, including a timeline and location for the move, the patient population that would be relocated, and the expected daily census for the off-site unit. The pharmacy team analyzed the past 6 months of medication dispense and administration data for the inpatient geriatric psychiatric unit to get an idea of the medications that might need to be available for quick access at the off-site location. Subsequent meetings allowed for viewing of the physical space for the planned off-site unit, including the proposed medication room. Fortunately, the off-site location had a room that was designed as a medication preparation and storage area. The medication room was

secure, and it had adequate counter space and shelving for storage, a sink for handwashing, and a medication refrigerator.

After reviewing the space and relevant 6-month historical medication administration data, a strategy to provide an efficient medication management process was developed. The goal was to allow providers the ability to seamlessly start new psychiatric-related therapies or make important dose titrations while accepting that there would be delays for nonurgent new medication orders or order changes. A member of the inpatient pharmacy staff planned to come over twice weekly (on Tuesday and Friday) for bulk medication replenishment and to take back unused medications, while courier services would be used as needed the rest of the week. Additionally, the attending psychiatrist for the unit worked closely with the pharmacy staff to meet the off-site needs and troubleshoot any issues as they arose.

It was determined that medication storage and dispensing could best be accomplished using a compact automated dispensing machine (ADM), an extensive floor stock list, and a set of patient-specific medication bins. The healthcare facility was able to repurpose a compact Pyxis ADM (Becton, Dickinson and Company) to place in the off-site location and install the needed Ethernet drop. The ADM configuration was optimized to allow for the storage of approximately 80 different medication formulations. It was used as the primary location for medication storage as it was secure and provided real-time inventory data to pharmacy staff. The ADM was stocked with emergency medications as well as common maintenance antipsychotics, antidepressants, and anxiolytics. The pharmacy team examined historical dispense data for the on-site unit and looked at the most frequently dispensed medications to get a baseline for what medications would be needed to stock the off-site machine. The team also looked at what emergency medications

were currently available in the on-site ADM to ensure those same medications would be in the ADM at the off-site location. We then filled the remainder of ADM spots with medications based on individual admitted patients' medication lists. Any medications that did not fit in the ADM due to space constraints were dispensed in a patient-specific manner via the pharmacy and were sent to the off-site location via the pharmacy team. Being strategic with the medications and dosage formulations loaded into the ADM facilitated the initiation of new therapies as well as dose titrations for patients while conserving precious ADM space. The initial par levels of each medication within the ADM were determined by factoring in the historical use data that was collected and an expected twice-weekly replenishment.

A series of bins located within the medication room served as floor stock and housed frequently used low-risk medications such as nonprescription pain medications (eg, acetaminophen, ibuprofen), multivitamins, nicotine replacement products (eg, nicotine gum, lozenges), and gastrointestinal motility agents (eg, calcium carbonate, docusate, milk of magnesium, pantoprazole). An extensive floor stock list allowed quick nurse access to commonly ordered medications without taking up ADM space. Patient-specific bins were utilized for anything that was not available in the ADM or floor stock; bins typically included maintenance medications for nonpsychiatric medical conditions like high blood pressure, congestive heart failure, and hyperlipidemia.

Finally, planning for medication management required communication of the plan and the setting of realistic expectations. A standard operating procedure (SOP) that described the medication ordering, dispensing, and delivery processes was disseminated. The list of medications that were readily available at the off-site location was communicated to providers, nurses, and pharmacy staff. To avoid multiple costly courier runs per day, it

was expected that there would be one standard courier run per day in the early afternoon. The standard courier run would be for nonurgent medication orders that were not already on-site. However, a courier could be used outside of the standard run time for urgent new orders or newly transferred patients. The expectation was that nonurgent medications could result in a delay of up to 24 hours, while urgent medications and new transfers could result in delays of no more than 2 hours.

Postimplementation challenges. Once the off-site unit was in operation, the focus shifted to providing ongoing support and evaluation of the medication management plan.

Pharmacists were able to clinically support the remote location with relative ease. In anticipation of the move, the off-site unit was fully equipped with the various technologies and equipment utilized at the on-site location (eg, phone lines, computers, electronic medical record access, ADM). The electronic medical record allowed for remote order review and verification and enabled the psychiatric clinical pharmacy specialist to continue to follow patients and make medication modification and monitoring recommendations. That said, the operational aspect of medication delivery required constant surveillance. Prior to the daily courier run, a pharmacy staff member reviewed the medication record of each patient on the off-site unit to ensure nothing was overlooked. The staff member also reviewed ADM inventory levels and made par level adjustments as needed based on orders and usage data.

Summary and lessons learned. Despite the extensive planning involved and the overall success in safely and effectively providing pharmacy support for an off-site geriatric inpatient psychiatry unit, we learned many lessons over the course of this innovative process.

First, we cannot overstate the importance of having a clear and readily accessible system for multidisciplinary communication around any new procedures needed for facilitating off-site medication management. Prior to the move, an SOP (described previously) was created to ensure clear communication of guidelines for all aspects of medication management for the off-site unit. This SOP provided a succinct overview of updated procedures, including such details as medication ordering, delivery, returns to the pharmacy, and the monitoring of medication refrigeration temperature. The SOP was included in a binder of reference material at the off-site location and was made available for all providers and staff, decreasing the potential for procedural errors or confusion.

Second, during the planning stages, a set of written criteria to identify which patients would be appropriate for admission to the new off-site location was developed. The admission criteria included (1) a negative COVID-19 test within 24 hours of admission, (2) low risk of aggression (this criterion was needed due to limited security supports at the off-site unit); and (3) limited medical needs.¹ The medical stability of the patient population was key, as relatively few medication regimen adjustments were needed. More complex patients sometimes require frequent changes to their medication regimens, which would have strained our ability to support the pharmacy needs at the off-site unit. Therefore, we recommend any future endeavors for developing similar off-site psychiatric units primarily focus on developing these units to treat less medically complex patients.

Third, we encountered some unique communication challenges in working with patients who were transferred from the main hospital to the off-site unit. Specifically, an additional step outside of the typical workflow was introduced: When patients were transferred to the off-site unit, the charge nurse was required to notify the pharmacy of the transfer. This change in workflow resulted in the pharmacy receiving a notice of transfer for

only approximately 50% of patients, leading to an increase in courier runs and some delivery delays. Fortunately, patient care and safety were not compromised, and we were able to address this challenge through increased vigilance and reminders sent by inpatient pharmacy staff and extra courier runs. Our goal throughout the move was to minimize our reliance on emergency courier runs. Although a few emergency runs per week were necessary initially, these runs decreased over time and ultimately became a rare occurrence.

Fourth, although the use of the ADM was successful overall, the compact size of the device and the unit census at times resulted in the need for intermittent adjusting of the ADM medication list and par levels. Ideally, to provide medication for approximately 10 to 12 patients, we would use a device more than twice the size of the device deployed. Quickly communicating updates about the ADM medication list to the off-site staff proved to be important for avoiding confusion and medication delivery delays. Our relocation was planned as a time-sensitive and temporary initiative to open space to create a dedicated COVID-19 inpatient psychiatric unit within the main hospital facility. Given the time-sensitive nature of the move in response to the first COVID-19 surge, we did not have the time necessary to navigate the construction needs required to accommodate a larger ADM at the off-site facility. However, we would have made the necessary modifications to support a larger ADM had we anticipated a permanent or longer move off-site.

Fifth, a pharmacy staff member initially traveled twice a week to the off-site location to replenish medications; yet, the time involved was cumbersome. After several weeks, the pharmacy staff provided education to the off-site nursing staff, and the nursing staff successfully assumed responsibility for ADM replenishment.

The COVID-19 pandemic has challenged the mental healthcare community to think creatively about how we can safely meet the needs of patients presenting to inpatient psychiatric units. To make space for a novel COVID-19 inpatient psychiatric unit, we temporarily relocated our geriatric inpatient psychiatric unit off-site to a local state psychiatric hospital. Our relocation represented a creative and rapid response to the initial COVID-19 surge in 2020.

The off-site unit was operational from May 5 to June 4, 2020. We successfully created a safe and effective way to provide pharmacy support to our off-site unit and learned many valuable lessons throughout the process. Fortunately, during this time period, we encountered fewer COVID-19–positive patients requiring inpatient psychiatric care than anticipated. This allowed the patients and staff from the off-site location to return to their original on-site geriatric psychiatry unit. Overall the medication management system at the off-site location was successful. The solutions for managing patients at an off-site location proved to be novel and eminently workable and laid the groundwork for future initiatives to manage hospital space during the COVID-19 pandemic.

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