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Poster Presentation Abstracts

Real World Experience with Bamlanivimab at an Academic Medical Center

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Background: TBamlanivimab is a monoclonal antibody (mAb) against the SARS-CoV-2 spike protein that has been shown to decrease COVID-19-related hospitalizations and emergency room (ER) visits in high-risk patient populations. UW Health began utilizing bamlanivimab in November 2020 shortly after the Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA). The objectives of this project were to characterize the use of bamlanivimab at UW Health, evaluate patient outcomes after infusion, and inform future mAb use.

Methods: This non-randomized, non-controlled, single-center retrospective chart review was certified as a quality improvement project by the University of Wisconsin-Madison Institutional Review Board. Patients who called the UW Health mAb hotline between November 23, 2020 and March 9, 2021 were included for review. Patients were excluded from review if they were not medically homed within UW Health. Information about patient eligibility for bamlanivimab infusion was collected during the screening call with UW Health mAb hotline. Eligibility for bamlanivimab infusion at UW Health matched the FDA EUA criteria. Data collected from the electronic health record included: age, body mass index (BMI), patient infusion status, and patient outcome(s) (i.e. infusion-related reactions, illness-related complications, hospitalization, death). If there were no documented encounters following infusion, patient was assumed to have "no complication" after bamlanivimab infusion.

Results: A total of 436 patients called the UW Health mAb hotline during the review period. Sixty patients were not medically homed within UW Health and were excluded. Of the 379 patients reviewed, 308 met FDA eligibility criteria for bamlanivimab infusion. Eligible patients had an average age of 60.9 ± 15.97 years and an average BMI of 31.3 ± 8.29 kg/m2. Most eligible patients (79%) met more than one eligibility criteria for bamlanivimab infusion. The most common eligibility criteria included age ≥ 65 (42.5%), age ≥55 with hypertension (37.9%), immunocompromised condition (37.3%) and BMI ≥ 35 kg/m2 (33.1%). A total of 256 patients received bamlanivimab infusion at UW Health. The majority of patients (n = 218) had no documented complications during/after infusion. Seventeen patients reported "mild complications" and did not require additional treatment. The most reported mild complication was fever/chills (35%). A total of 21 patients (8.2%) who received a bamlanivimab infusion were subsequently hospitalized or treated in the ER for a COVID-related problem such as dyspnea. Of those hospitalized, the average time to admission was 8 ± 11 days after infusion.

Conclusion: This real-world application of bamlanivimab confirms a low incidence of complications or further disease progression following mAb infusion. Efforts for future mAb use should target patients ≥ 65 years of age, ≥ 55 years of age with hypertension or BMI ≥ 35 as they more frequently agreed to receive bamlanivimab infusion.

Evaluation of QTc Prolongation Risk of Veterans in an Outpatient Mental Health Clinic

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Background: QT prolongation can be defined as a measure of delayed ventricular repolarization, or a delay in the time it takes the heart's electrical system to recharge between heartbeats. It can be measured by performing an electrocardiogram (ECG). Excessive QT prolongation can predispose the myocardium to the development of early after-depolarizations, which can cause dangerous rapid heartbeats and increase the risk of Torsades de Pointes, a life-threatening form of ventricular tachycardia. This project evaluates QTc prolongation risk of Veterans in an outpatient mental health clinic.

Methods: Veterans 18 years or older were included in this analysis if they were treated by a Clinical Psychiatric Pharmacist in an outpatient mental health clinic and actively prescribed one of the following QTc prolonging drugs as defined by CredibleMeds including methadone, haloperidol, escitalopram, citalopram, chlorpromazine, or thioridazine. The Tisdale QTc Risk Score Calculator, which estimates prolonged QTc interval risk in an inpatient setting was modified to evaluate patients in an outpatient setting. Chart reviews were conducted to obtain the following risk factors: age, sex, loop diuretic, QTc value, potassium level, and number of QTc prolonging drugs. Veteran's mental health treatment coordinator and primary care physician were alerted in the Veteran's medical record of analysis and recommended interventions for those Veterans with modifiable risk factors, especially moderate or high risk of QTc prolongation.

Evaluation of Clinician Perceptions and Impact of a Coordinated Care Transitions Program for COPD Management

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Background: Chronic Obstructive Pulmonary Disease (COPD) is the third leading cause of death worldwide. Patients with COPD exacerbations experience deteriorating lung function, worsening quality of life, and loss of independence. To reduce patient readmissions associated with exacerbations, the Chronic Obstructive Pulmonary Disease Coordinated Access to Reduce Exacerbations (COPD CARE) service was developed. COPD CARE is a team-based, coordinated, transitions of care program that integrates evidence-based interventions as a package for COPD management within the patient-centered medical home (PCMH) model. The COPD CARE service aims to enhance integration of COPD best practices into routine clinical care, using a holistic approach that integrates the Clinical Pharmacy Practitioner (CPP), Registered Nurse Care Manager, and Primary Care Provider within each primary care team. The role of the CPP within COPD CARE is unique in that pharmacists prescribe medications, perform lab-monitoring and coordinate follow-up and referrals using a scope of practice.

Objectives: The aims of this quality improvement evaluation were to (1) explore clinician perceptions of COPD CARE training strategies and (2) assess the impact of the COPD CARE implementation package on overall COPD management into care.

Methods: A prospective, mixed methods design to evaluate implementation of COPD CARE at two medical centers in the Veterans Health Administration over 24 months was employed for this evaluation. The service implementation process was guided by the Replicating Effective Programs (REP) framework that divided activities into pre-implementation, implementation, and dissemination phases. The REP framework was chosen due to its emphasis on promoting learner self-efficacy, which has been described as a critical predictor of future behavior. Two Plan-Do-Check-Act (PDCA) cycles occurred over a 24-month period where the COPD CARE implementation package was (1) refined (2) implemented and (3) evaluated for impact on incorporation of best practices into primary care. Clinician perceptions of the COPD implementation package were assessed through issuance of a Likert Scale-based questionnaire and review of qualitative content obtained during clinician audit and feedback sessions. Impact of the implementation package on incorporation of COPD best practices into primary care delivery was measured using data obtained from the VA electronic health record (EHR).

Results: Longitudinal improvements were observed in clinician responses to questionnaire items from baseline to immediately after training completion, with significant improvements observed for all scales evaluating the COPD implementation package at the end of the final PDCA cycle. EHR data demonstrated significant improvements in the count of COPD best practices incorporated into routine clinical care after training completion ($p<0.001$), illustrating widespread incorporation of COPD best practices to serve patients.

Conclusions: This implementation of a complex care model for COPD demonstrates how interprofessional, frontline care teams can integrate implementation science theory and methods to systematically improve local care innovations.

Medication Use Evaluation of Rifaximin to Treat Small Intestinal Bacterial Overgrowth (SIBO)

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Background: There was a perceived increase in the amount of rifaximin prescriptions, which require a prior authorization drug request (PADR), to treat SIBO from 12/1/2019 to 12/31/2020 at the Milwaukee VA Medical Center. This raised concerns that lack of adherence to clinical guidelines could lead to ineffective treatment and increased institutional costs. This project aims to determine if rifaximin prescriptions are appropriate according to the American College of Gastroenterology (ACG) practice guidelines, efficacious and to define institutional cost.

Methods: ASubjects were identified from a report identifying PADRs for rifaximin for SIBO from 12/1/2019 to 12/31/2020 and data was collected through retrospective chart review. The primary outcome was measured by the proportion of rifaximin prescriptions that were appropriate to treat SIBO per ACG guidelines. Secondary outcomes were measured by the institutional cost of rifaximin prescriptions and the proportion of patients effectively treated for SIBO with rifaximin.

Results: 27 patients met study criteria and were included in data analysis. Patients were a median age of 66 years old (interquartile range 51-72), with 85% being male. SIBO diagnostic testing recommended by the ACG guidelines were conducted for 11% of patients and 89% of patients were treated utilizing the guideline recommended frequency of 550 mg three times daily. The most common duration at the VAMC was 14 days which signified an institutional cost per guideline-directed prescription of around $1,000. The total institutional costs incurred during this time totaled over $24,000. Therapeutic success, defined as no retreatment of SIBO with rifaximin within three months, was achieved in 78% of patients.

Conclusion: Rifaximin for the treatment of SIBO incurs substantial cost to the VAMC. While rifaximin is a guideline recommended agent, diagnostic testing to confirm SIBO is not routinely conducted. It may be cost effective for the VAMC to require diagnostic testing to confirm a SIBO diagnosis before a PADR for rifaximin is approved. It should also be noted that many durations have been studied and shown to be effective, and therefore a standard shorter duration may also save money without sacrificing efficacy.

Evaluation of Electronic Health Record Ventilator Bundle Order Compliance: A Retrospective Study in Southeastern Wisconsin Community Hospitals

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Background: The medications included in the Ascension Wisconsin ventilator bundle order set include artificial tear ointment, chlorhexidine mouthwash, analgesics, sedatives, deep venous thrombosis (DVT) chemoprophylaxis, and stress ulcer prophylaxis (SUP). Such order sets have been shown to improve patient outcomes by reducing the occurrence of ventilator-associated pneumonia, ensuring appropriate pain and sedation management, and preventing DVTs and stress ulcers among mechanically ventilated patients. The purpose of this project was to evaluate the ventilator bundle order set usage at Ascension SE Wisconsin Hospital – St. Joseph Campus (ASJH) as a way to increase compliance locally and across the Ascension Wisconsin healthcare system.

Methods: A retrospective analysis was conducted using the electronic health record (EHR) of patients who were mechanically ventilated at ASJH, Ascension Hospital 2 (AH2), Ascension Hospital 3 (AH3), and Ascension Hospital 4 (AH4) between March 1, 2021 and June 1, 2021. An EHR report was built to identify patients that met the inclusion criteria. A data collection form was then used to document the presence of ventilator bundle order set usage and the number of medications ordered using the ventilator bundle for each patient. The primary outcome was the proportion of intubated patients at ASJH who had at least one medication ordered using the ventilator bundle order set compared to AH2, AH3, and AH4. The secondary outcome was the average number of medications ordered using the ventilator bundle order set at ASJH compared to AH2, AH3, and AH4.

Results: There were 197 total patients included in the analysis, sixty-eight of which were intubated and hospitalized at ASJH. The ventilator bundle was ordered for 12 of 68 (18%) patients at ASJH compared to 68 of 129 (53%) at AH2, AH3, and AH4. The average number of medications that each patient had ordered, out of the 6 possible medication classes from the ventilator bundle order set, was 2.6 (43%) at ASJH compared to 3.4 (57%) at the other sites. The ventilator bundle was ordered for 80 (41%) patients across the four Ascension hospitals.

Conclusion: ASJH had a lower ventilator bundle order set compliance compared to other Ascension hospitals. ASJH plans on educating the interprofessional healthcare team on the importance of utilizing the ventilator bundle order set. As a system, further education and order set re-standardization are underway to make the ventilator bundle easier to use for the ordering providers.

Understanding the Effect of a Complex Medication Resource on the Knowledge and Decision Making Comfortability of Clinical Pharmacists

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Background: Assess clinical pharmacy specialists' understanding of a complex medication and gauge decision making comfortability related to that medication before and after review of an internal resource made available to the Madison VA Pharmacy Team.

Methods: Eligible participants are current Clinical Pharmacy Specialists at the Madison VA who work in the inpatient setting. A resource was created detailing the dosing, preparation, administration, monitoring, and side effects of Anti-Thymocyte Globulin Rabbit (Thymoglobulin). A 10 question pre-test was distributed to participants to assess their knowledge regarding Thymoglobulin indication, mechanism of action, patient screening, administration, and comfort level making recommendations about Thymoglobulin to other health care personnel. The resource was then distributed to participants and they were asked to complete the same 10 question post-test to assess the difference in knowledge and comfortability before and after reviewing the resource.

Evaluation of the Use of Four-Factor Prothrombin Complex Concentrate (4F-PCC) at the William S. Middleton Veterans Affairs Hospital

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Background: Four Factor PCC is a blood coagulation factor indicated for the urgent reversal of warfarin in the setting of acute major bleeding or need for urgent surgery. It has also been used off-label to reverse direct oral anticoagulants (DOAC) in similar life-threatening settings. The Madison VA Hospital uses order sets to guide prescribing and appropriate use of 4F-PCC. The Joint Commission requires use of evidence-based guidelines for reversal of anticoagulation and management of associated bleeding as well as measurement of anticoagulant safety practices. The objective of this quality assurance project was to assess appropriate use of 4F-PCC and describe patient outcomes.

Methods: This evaluation was retrospectively conducted between 1/1/2020 – 6/1/2021 at the Madison VA where a list of patients receiving 4F-PCC was obtained via VistA reports. Patient's individual data were extracted via chart review. Multiple patient factors were reviewed including but not limited to reason for reversal, details of antithrombotic and vitamin K use, bleeding severity, HASBLED score, and adverse events.

Results: Fifteen patients received 4F-PCC and were included in the analysis. Sixty percent of patients who received 4F-PCC were deemed appropriate and in accordance with facility guidelines. Four factor PCC use fell outside of local guidelines when used for severe liver disease with coagulopathy and when used for DOAC reversal with coadministration of vitamin K. The most common indication for 4F-PCC was life-threatening bleeding (53%) and the majority of patients were on DOACs. Use of 4F-PCC was deemed successful (cessation of bleeding or ability to perform surgery) for 87% of patients. Of the patients who received 4F-PCC for anticoagulant reversal, 33% had their anticoagulant discontinued permanently. No patients had thromboembolic events within 30 days; however, three patients died within 30 days of receiving 4F-PCC.

Conclusion: Deviations from facility guidelines were observed in this quality assurance project. Notably, coadministration of vitamin K in the setting of DOAC reversal and use of 4F-PCC in the setting of severe liver disease and coagulopathy. Staff education is needed to avoid vitamin K use for DOAC reversal. Further exploration is needed for the role of 4F-PCC in severe liver disease with coagulopathy with Pharmacy and Therapeutics approval, if appropriate.

Froedtert Specialty Pharmacy "Lite" Program

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Background: Specialty medications have become increasingly popular in recent years and require high level pharmacist intervention and time intensive support. Pharmacists working in Froedtert HDSP provide clinical services aligning with URAC accreditation guidelines to all patients filling at HDSP, including those not on a specialty medication. The study objective was to optimize pharmacist time to prioritize management of specialty patients by establishing criteria for patients to be managed by a pharmacy technician-driven specialty pharmacy "lite" program and streamlining pharmacy workflows to increase efficiency.

Methods: This quality improvement project utilized time studies to analyze the amount of pharmacist time and number of tasks performed per chart review for non-specialty patients. Patients included in the trial were those filling non-specialty medications who are receiving specialty pharmacy services through Froedtert HDSP and requesting monthly calls. Patients were excluded from the study if they were not enrolled in the Froedtert HDSP program, currently filled a specialty medication, enrolled in home delivery only, or declined specialty pharmacy services.

Results: Implementation of Specialty Pharmacy "Lite" workflow decreased pharmacist time by approximately 50% per chart review.

Conclusion: These findings will be used to expand the specialty pharmacy "lite" chart workflow in select patient populations (specialty and non- specialty patients). Leaders will also provide training to pharmacy technicians with the goal of this becoming a technician-driven workflow in the future.

Health Benefits of Women From Myanmar

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Background: The immigrant landscape in Wisconsin is constantly changing. Since 2000, many refugees have settled in Wisconsin from Bhutan, Iraq, Laos, and Somalia; however, one of the largest growing refugee populations in Wisconsin are those from Myanmar. This diverse country has many ethnic groups including Chin, Kachin, Karen, Mon, Rakhine, Shan, Wa, and many others. Due to this diversity, there are numerous dialects spoken and different beliefs that can range from Buddhist animism to Christianity to Islam.

Women have unique health concerns that impact not only them, but their families as well. Different cultures have different beliefs that influence their approach to health care in women, which adds to the challenge. The essential role women play in families makes understanding cultural differences in this immigrant group necessary to provide effective health care to these patients and their families. This project describes some of the different health care issues facing female Burmese immigrants in the United States.

Methods: This cultural group was selected by searching Wisconsin Department of Children and Families to determine what were the largest immigrant groups in Southeast Wisconsin over the past 20 years. Centers for Disease Control and Prevention (CDC) and PubMed were searched to learn about cultural beliefs of Burmese patients. Keywords used to search the literature included "Myanmar," "Burmese," "menstruation," "contraception," "pregnancy," "breastfeeding," and "menopause."

Results: Burmese patients have a wide variety of cultural beliefs due to the numerous ethnic and religious groups coming from Myanmar. These beliefs can impact women's health issues in this patient population, such as those involving menstruation, contraception, pregnancy, breastfeeding, and menopause. For example, in their culture, foods and medicine play an important role in helping restore the imbalance of hot and cold which occurs during illness. Additionally, maintaining this balance involves food and medicine which impacts what can be consumed during menstruation, what foods should be consumed to restore balance after childbirth, and the ideal foods to consume to promote breastfeeding. Patients should be educated regarding the importance of preventative medicine as this may be a new concept and may help prevent women from deferring medical care until health issues arise.

Conclusion: It is important for healthcare providers in Wisconsin to understand the unique health beliefs that face this growing population of Myanmar refugees. Understanding women's health is especially important as women play a vital role as financial provider, caregiver, and influencer of future generations. By learning the health beliefs of women from Myanmar, health care providers in Wisconsin can better serve their patients allowing them to live healthier and more empowered lives.

Effect of Sodium-Glucose Cotransporter 2 Inhibitors on Fluid Balance in Patients with Advanced Heart Failure

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Background: TA proposed mechanism of benefit of sodium-glucose cotransporter 2 inhibitors (SGLT2i) in patients with heart failure with reduced ejection fraction (HFrEF) is the diuretic effect. This is not the only mechanism because other classes of diuretics do not show the same benefit in HFrEF patients.[1-4] The purpose of this project is to quantify how much of a diuretic effect SGLT2i have on patients with HFrEF. The FDA accepted the new supplemental drug application for Empagliflozin in January 2021 and it is currently under investigation for the new indication.[5] In May 2020 the U.S. Food and Drug Administration (FDA) approved dapagliflozin oral tablets for adults with HFrEF to reduce the risk of cardiovascular death and hospitalization for heart failure.[6]

Objectives: The primary objective is to determine the change in fluid output 24 hours pre-/post-SGLT2i administration in patients with advanced heart failure (AdHF) with HFrEF. The secondary objective is to see if SGLT2i are safe in AdHF patients.

Methods: This retrospective cohort with self-control analyzes patient data from January 22nd – April 9th 2021. The primary outcome is to measure net fluid output 24 hours pre-/post-SGLT2i administration. The secondary outcome is to measure the change in serum creatinine (Scr), diuretic use, weight, and blood glucose. Patients were included if they were admitted to Froedtert CVICU or 3W unit, have HFrEF, and were started on an SGLT2i as an inpatient. Patients were excluded if they did not have a recorded urine output, have been on an SGLT2i previously, were treated for infection, or had dialysis requirements. The formulary approved SGLT2i at Froedtert is dapagliflozin. Patient information collected included: race, age, HFrEF status, ejection fraction, ACC/AHA stage, NYHA class, presence of LVAD, concomitant inotrope use, date and time of dapagliflozin start, dapagliflozin dose, net fluid output 24h pre-/post-dapagliflozin administration, Scr day 0/1, eGFR day 0/1, weight day 0/1, diabetes status, descriptions of diuretics pre-/post-dapagliflozin administration, Entresto utilization, systolic blood pressure range on day 0/1, and if the patient was discharged on the newly initiated dapagliflozin.

Results: Sixteen inpatient charts were reviewed at Froedtert Hospital. Overall, nine patients (56%) were ACC/AHA stage D heart failure and six patients (38%) were NYHA functional class IV. The change in net fluid output 24 hours pre-/post-dapagliflozin administration ranged from -6004 mL to +1380 mL. Five patients (31%) showed the predicted outcome of having greater net fluid output 24 hours post-dapagliflozin administration. Eleven patients (69%) were discharged on dapagliflozin. Reasons for not discharging on dapagliflozin included: cost, Scr elevation, and having type 1 diabetes. The change in Scr between day 0/1 ranged from -0.13 mg/dL to +0.41 mg/dL.

Conclusions: The addition of dapagliflozin to AdHF patients during an inpatient hospital stay did not provide a significant benefit to net fluid balance 24 hours after administration. There are many variables impacting fluid status while patients are in the hospital. Dapagliflozin is starting to be utilized more often in patients with AdHF. One of the biggest barriers to patients being discharged on dapagliflozin is that it is too expensive and not covered by insurance.

References:

1. McMurray JJV, Solomon SD, Inzucchi SE, et al. Dapagliflozin in Patients with Heart Failure and Reduced Ejection Fraction. *N Engl J Med*. 2019;381(21):1995-2008. doi:10.1056/NEJMoa1911303
2. Packer M, Anker S, Butler J, et al. Cardiovascular and renal outcomes with empagliflozin in heart failure. *N Engl J Med*. 2020;383(15):1413-1424. doi: 10.1056/NEJMoa2022190
3. Bhatt DL, Szarek M, Steg PG, et al. Sotagliflozin in patients with diabetes and recent worsening heart failure. *N Engl J Med*. 2021;384(2):117-128. doi: 10.1056/NEJMoa2030183
4. Butler J, Usman MS, Khan MS, et al. Efficacy and safety of SGLT2 inhibitors in heart failure: systematic review and meta-analysis [published correction appears in ESC Heart Fail. 2021 Jun;8(3):2362]. *ESC Heart Fail.* 2020;7(6):3298-3309. doi:10.1002/ehf2.13169
5. US FDA accepts supplemental New Drug Application for Jardiance (empagliflozin) for adults with heart failure with reduced ejection fraction. Boehringer-ingelheim.us. Published January 11, 2021. Accessed July 23, 2021. https://www.boehringer-ingelheim.us/press-release/us-fda-accepts-supplemental-new-drug-application-jardiance-empagliflozin-adults-heart
6. Office of the Commissioner. FDA approves new treatment for a type of heart failure. Fda.gov. Published May 5, 2020. Accessed July 23, 2021. https://www.fda.gov/news-events/press-announcements/fda-approves-new-treatment-type-heart-failure

Evaluation of a Pharmacist-directed Enoxaparin Dosing Protocol in a Regional Burn Unit

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Background: The purpose of this investigation was to evaluate the efficacy of a pharmacist-directed enoxaparin protocol used to achieve venous thromboembolism (VTE) prophylactic anti-factor Xa levels among patients admitted to a regional burn center.

Methods: A retrospective chart review was completed for any patient ≥ 18 years old who was admitted to the burn intensive care unit with an acute thermal burn injury and received enoxaparin under the pharmacist-directed enoxaparin protocol between July 1st, 2018 – June 30th, 2019. Only patients who received at least one anti-factor Xa level were included in the investigation.

Results: A total of 177 patient charts were assessed and 39 patients met the pre-defined inclusion criteria. Among these patients, 108 anti-factor Xa levels were collected and 71 (66.4%) were within the prophylactic range (≥ 0.2 - < 0.4 IU/mL). There were 5 patients (12.8%) who never reached the prophylactic goal before the discontinuation of enoxaparin or patient discharge.

Conclusion: These results demonstrate more frequent attainment of prophylactic anti-factor Xa levels than previously described in the existing literature depicting similar pharmacist-directed enoxaparin protocols in burn patients. This investigation is limited by its assessment of anti-factor Xa levels at a single site. Future assessments should include patients with chemical and electrical burns, Stevens-Johnsons Syndrome, and toxic epidermal necrosis syndrome.

Cash for Expired Medications: Implementation of a DIY Reverse Distribution System

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Background: In October of 2020, the Office of Inspector General (OIG) determined the Veteran Administration's (VA) current reverse distribution contracts were below accountability and oversight standards. Therefore, a transparent reverse distribution process was designed and implemented to return expired medications for credit back. This system will serve as a framework for the entire VA healthcare system.

Methods: Medications are pulled from pharmacy shelves prior to their expiration date during monthly inspections. Expired medications are then entered into the N3PR reverse distribution management program. The program identifies which expired medications are credit-worthy and provides instructions on how to return them. Credit-worthy medications are shipped by mail to return depots; credit is deposited in respective wholesaler accounts after processing. Non-credit worthy medications are disposed of on-site. The preliminary primary endpoint is the estimated total return value of expired medications awaiting credit back from using the program.

Results: Expired medications from October 2020 through June 2021 were included in the analysis. The N3PR program estimated a total return value of $43,766.62 as of 8/2/21 for these medications. Shipping costs totaled $131.45 to mail them to return depots. The N3PR license costs $2,500 per year. The estimated net profit thus far is $41,135.17.

Conclusion: Implementation of an on-site reverse distribution system allowed for a substantial increase in transparency due to the ability to track each step of the return process, including the estimated and actual return values for each individual credit-worthy medication. While higher revenues should be observed due to elimination of third-party management, the subsequent increase in on-site labor for initiation of the process proved intensive. Furthermore, the significant time delay between ending third-party management and initiating the process on-site appears to have resulted in significant reductions of credit-worthy medications this year from not returning them fast enough after their expiration dates. The addition of future dedicated pharmacy technician FTE for process management is expected to be justified over time based on historical reverse distribution returns exceeding $200,000 plus the cost savings of eliminating third-party management. Future medication return margins may also increase based on numerous discrepancies resolved upon initiating the reverse distribution process on-site.