ORIGINAL RESEARCH

Impact of VA Hematology/Oncology Clinical Pharmacy Practitioners in the Review of Community Prescriptions for Specialty Medications

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Background: Within the US Department of Veterans Affairs (VA), eligible veterans can receive covered health care through the community care network. Many prescriptions for specialty medications made by community care prescribers are filled by outpatient VA pharmacies. Trained hematology/oncology clinical pharmacy practitioners (CPPs) review specialty medication prescriptions from community-based prescribers. This study's primary objective was to evaluate clinical interventions initiated by hematology/oncology CPPs at the Veterans Affairs North Texas Health Care System (VANTHCS) during their review of hematology/oncology specialty prescriptions from community care prescribers.

Methods: A retrospective chart review of VANTHCS patients enrolled in the community care program with a specialty hematology/oncology prescription received and reviewed by a VA clinical hematology/oncology CPP was conducted for records from January 1, 2015, to June 30, 2023. The primary outcome was the number and types of clinical interventions. Secondary outcomes include the number of interventions accepted and/or denied by the prescriber and the financial implications of these interventions.

Results: Two hundred twenty-one specialty hematology/oncology prescriptions met the study inclusion criteria. VANTHCS hematology/oncology CPPs completed clinical interventions for 82 prescriptions (37%). Among those prescriptions, CPPs documented 97 clinical interventions. The most commonly documented interventions included managing/preventing a drug interaction (26%) and dose adjustment requests (25%).

Conclusions: Hematology/oncology CPPs at VANTHCS are essential in reviewing anticancer medication prescriptions from community-based practitioners ; CPPs completed clinical interventions for more than one-third of the prescriptions and prescribers approved most of these interventions.

The value of a hematology/oncology clinical pharmacy practitioner (CPP) has been validated in several studies documenting their positive impact on patient outcomes, supportive care management, laboratory monitoring, medication error identification, and drug expenditure.[1-6] With > 200 oncology-related US Food and Drug Administration approval notifications published from 2020 to 2023, it is no surprise that national trends in oncology drug clinic expenditures increased from $39.9 billion in 2020 to $44.1 billion in 2021.[7,8] With the rapidly changing treatment landscape, new drug approvals, and risk of polypharmacy, oral anticancer agents carry a high risk for medication errors.[4] Additional challenges include complex dosing regimens and instructions, adherence issues, drug interactions, adjustments for organ dysfunction, and extensive adverse effect (AE) profiles.

Because of the niche and complexity of oral anticancer agents, trained CPPs have hematology/oncology education and expertise that pharmacists without specialized training lack. A survey of 243 nonspecialized community pharmacists that assessed their knowledge of oral anticancer therapies revealed that only about half of the knowledge questions were answered correctly, illustrating an education gap among these pharmacists.[9] The Hematology/Oncology Pharmacist Association's suggests that best practices for managing oral oncology therapy should include comprehensive medication review by an oncology-trained pharmacist for each prescription.[10]

The US Department of Veterans Affairs (VA) community care network, which was established by the MISSION Act, allows covered access for eligible veterans in the local community outside of the VA network. Unfortunately, this dual-system use of health care could increase the risk of poorly coordinated care and has been associated with the risk of inappropriate prescribing.[11,12] It is unclear how many private practices enrolled in the community care program have access to oncology-trained pharmacists. Specialized pharmaceutical reviews of oral anticancer medication prescriptions from these practices are vital for veteran care. This study

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TABLE 1 Clinical Pharmacy Practitioner Interventions for Community-Based Prescriptions (N = 97)

Types of interventions	No. (%)
Manage/prevent drug interaction	25 (26)
Dose adjustment request	24 (25)
Prescription denied	13 (13)
Preferred/cost-effective alternative	11 (11)
Manage/prevent adverse drug reaction	7 (7)
Supportive care	7 (7)
Drug formulation change	5 (5)
Baseline laboratory test	5 (5)

evaluates the clinical and financial interventions of hematology/oncology CPPs review of specialty hematology/oncology prescriptions from community care health care practitioners (HCPs) at the Veterans Affairs North Texas Health Care System (VANTHCS) in Dallas.

METHODS

This study is a retrospective review of Computerized Patient Record System (CPRS) records of patients at VANTHCS from January 1, 2015, to June 30, 2023. Patients included were aged ≥ 18 years, enrolled in the VA community care program, received a specialty hematology/oncology medication that was dispensed through VA pharmacies or VA-contracted pharmacies, and had an hematology/oncology CPP medication review documented in CPRS. The primary aim of this study was to assess the number and types of clinical interventions performed. A clinical intervention was defined as a documented communication attempt with a community care HCP or direct communication with a patient to address a specific medication-related issue noted during CPP review.

Review of specialty hematology/oncology medications by a hematology/oncology CPP included evaluation of therapy indication, such as whether the prescription meets clinical guidelines, VA criteria for use, or other clinical literature as judged appropriate by the CPP. In some cases, the CPP requested that the community care HCP prescribe a more cost-effective or formulary-preferred agent. Each prescription was reviewed for dosage and formulation appropriateness, drug interactions with available medication lists, baseline laboratory test completion, and recommended supportive care medicines. At times, patient counseling is completed as part of the clinical review. When necessary, CPPs could discuss patient cases with a VA-employed oncologist for further oversight regarding appropriateness and safety. Secondary outcomes included the number of interventions accepted or denied by the prescriber provider and cost savings.

Data collected included the type of malignancy, hematology/oncology specialty medication requested, number and type of interventions sent to the community care prescriber, number of interventions accepted or denied by the community care prescriber, and whether the CPP conducted patient counseling or dispensed or denied the product. Cost savings were calculated for medications that were denied or changed to a formulary preferred or cost-effective agent using pricing data from the National Acquisition Center Contract Catalog or Federal Supply Schedule Service as of April 2024.

RESULTS

A total of 221 hematology/oncology prescriptions met inclusion criteria. Among patients receiving these prescriptions, the median age was 70 years and 91% were male. The most common malignancies included 31 instances of multiple myeloma (14%), 26 for chronic lymphocytic leukemia (12%), 24 for prostate cancer (11%), 23 for glioblastoma/brain cancer (10%), 18 for renal cell carcinoma (8%), 17 for colorectal cancer (8%), and 15 for acute myeloid leukemia (7%). Clinical interventions by the hematology/oncology CPP were completed for 82 (37%) of the 221 prescriptions. One clinical intervention was communicated directly to the patient, and attempts were made to communicate with the community care HCP for the remaining 81 prescriptions. The CPP documented 97 clinical interventions for the 82 prescriptions (Table 1). The most commonly documented clinical interventions included: 25 for managing/preventing a drug interaction (26%), 24 for dose adjustment request (25%), 13 for prescription denial (13%), and 11 for requesting the use of a preferred

or more cost-effective product (11%). Of note, 16 patients (7%) received counseling from the hematology/oncology CPP. Ten patients (5%) received counseling alone with no other intervention and did not meet the definition of a clinical intervention.

The most frequent prescriptions requiring intervention included 8 for enzalutamide, 7 for venetoclax, 6 for ibrutinib, and 5 each for lenalidomide, cabozantinib, and temozolomide. Among the 97 interventions, 68 were approved (70%), 15 received no response (16%), and 14 were denied by the community care HCP (14%). Despite obtaining no response or intervention denial from the community care HCP, hematology/oncology CPPs could approve these prescriptions if clinically appropriate, and their reasoning was documented. Table 2 further describes the types of interventions that were denied or obtained no response by the community care practitioner. Among the prescriptions denied by the hematology/oncology CPP, 11 were rejected for off-label indications and/or did not have support through primary literature, national guidelines, or VA criteria for use. Only 2 prescriptions were denied for safety concerns.

These documented clinical interventions had financial implications. For drugs with available cost data, requesting the use of a preferred/cost-effective product led to estimated savings of at least $263,536 over the study period with some ongoing cost savings. Prescription denials led to further estimated savings of $186,275 per month, although this is limited by the lack of known costs of alternative therapies the community care physicians chose.

TABLE 2 Community Prescriber Response to Interventions

Intervention	No. (%)
Denied	14 (100)
Dose adjustment request	6 (43)
Manage/prevent drug interaction	2 (14)
Manage/prevent adverse drug reaction	2 (14)
Supportive care	1 (7)
Preferred/cost-effective alternative	3 (21)
No response	15 (100)
Dose adjustment request	1 (7)
Manage/prevent drug interaction	9 (60)
Manage/prevent adverse drug reaction	2 (13)
Request supportive care	1 (7)
Request use of preferred/cost-effective product	1 (7)
Request for baseline laboratory tests	1 (7)

DISCUSSION

More than one-third of prescriptions required clinical interventions, and 70% of these interventions were accepted by the community care prescriber, demonstrating the CPP's essential role. Results indicate that most CPP clinical interventions involved clarifying and correcting doses, managing pertinent drug interactions, and ensuring appropriate use of medications according to clinical and national VA guidelines. Other studies have examined the impact of CPPs on patient care and cancer treatment.[5,6] The randomized, multicenter AMBORA trial found that clinical pharmacist support reduced severe AEs and medication errors related to oral anticancer agents.[5] The per-patient mean number of medication errors found by pharmacist review was 1.7 (range, 0 to 9), with most medication errors noted at the prescribing stage.[5] Suzuki and colleagues analyzed data from 35,062 chemotherapy regimens and found that 53.1% of the chemotherapy prescriptions were modified because of pharmacist interventions.[6] The most common reason for prescription modifications was prescription error.

Most of the clinical interventions in this study were accepted by community HCPs, indicating that these prescribers are receptive to hematology/oncology CPP input. Among those with no response, most were in relation to recommendations regarding drug interactions. In most of these cases, the drug interaction was not clinically concerning enough to require a response before the CPP approved the prescription. Therefore, it is unknown whether the outside HCP implemented the clinical recommendations. The most common types of clinical interventions the community care HCP declined were dose adjustment requests or requests to switch to a more cost-effective/formulary-preferred agent. In these cases, the prescriber's preference was documented and, if clinically appropriate, approved by the CPP.

Although the financial implications of CPP clinical interventions were only marginally evaluated in this review, results suggest that cost savings by requests to switch to a cost-effective/formulary preferred agent or prescription denials are substantial. Because of changes in prescription costs over time, it is possible that savings from CPP intervention

were greater than calculations using current Federal Supply Schedule Service pricing. The total impact of CPP prescription interventions on reducing or preventing hospitalizations or AEs is not known from this review, but other data suggest that cost savings may benefit the system.[13,14]

Limitations

This study's retrospective design is a limitation because practice patterns at the VANTHCS involving multiple hematology/oncology CPPs review of community care prescriptions might have evolved over time. The total financial implications of CPP interventions cannot fully be elucidated. The cost of alternative therapies used for patients who received a prescription denial is not factored into this review.

CONCLUSIONS

VANTHCS CPPs played an essential role in reviewing anticancer medication prescriptions from community care prescribers. In this study, CPP clinical interventions were completed for more than one-third of the prescriptions and the community-based HCP approved most of these interventions. These changes also resulted in financial benefits.

These findings add to the body of literature emphasizing the need for hematology/oncology-trained CPPs to review anticancer prescriptions and treatment plans. Our review could be used to justify CPP involvement in community care specialty medication review at VA facilities that do not currently have CPP involvement.

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Ethics and consent

This retrospective chart review study involving human participants was in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Veterans Affairs North Texas Health Care System Institutional Review Board approved this study. Given retrospective nature of this article, patient consent was not required.

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