

Implementing and evaluating an oral chemotherapy tracking tool

An academic medical center develops guidelines for monitoring medication adherence and side effects in outpatients.

By Kristin M. Ferguson, DNP, RN, OCN; Laurie J. Dohnalek, DNP, MBA, RN, NE-BC, CENP; Susan S. Moreland, DNP, RN, AOCN, CRNP; Susan M. Schneider, PhD, RN, AOCN, FAAN

The past 10 years have seen an increase in the use of oral chemotherapy to treat cancer. Patients administer these medications at home, which provides treatment option flexibility but also can lead to potential complications, including medication nonadherence and unreported side effects. For example, a systematic review of oral chemotherapy by Greer and colleagues reported patient adherence rates from 46% to 100%. In addition, many chemotherapy and targeted cancer agents have a narrow therapeutic window, requiring them to be taken within a specific time frame and dose to prevent cancer progression.

In 2013, the American Society of Clinical Oncology (ASCO) and the Oncology Nursing Society (ONS) published recommendations that cancer centers develop outpatient oral chemotherapy guidelines to help nurses and providers teach patients about the medications and monitor them for adherence and side effects between provider visits. As part of creating these types of guidelines at MedStar Georgetown University Hospital Lombardi Comprehensive Cancer Center (MGUH LCCC), a nurse coordinator, acting as project investigator, developed and implemented a quality improvement (QI) project in which an oral chemotherapy tracking tool for the nurse coordinator department was piloted.



Project goals

The tracking tool, which was created based on published guidelines and recommendations, prompts nurse coordinators to ask patients specific questions related to medication adherence and side effects and to reinforce initial medication education during phone calls 7 to 14 days after chemotherapy initiation. (See *Oral chemotherapy tracking tool*.)

Project goals included:

- making all nurse coordinators aware of the tool
- achieving at least 80% of nurse coordinators reporting the tracking tool as helpful to their practice

Oral chemotherapy tracking tool

Based on published guidelines and recommendations, this oral chemotherapy tracking tool helps oncology nurse coordinators monitor medication adherence and side effects and reinforce initial education.

Patient	Date of birth	Oral chemotherapy agent/specialty pharmacy	Start date	Date spoke with patient after starting chemotherapy	Can patient identify possible side effects?	How many doses has patient missed since beginning medication?	Have you documented communication in EHR* via progress note?	When is patient's next set of labs?	When is patient's next provider visit?	Is follow-up needed?

Questions to ask patient 7 to 14 days after beginning oral chemotherapy:

- Do you have any concerns about your medication?
- What are three common side effects of your medication?
- Since beginning the medication, how many doses have you missed? (Example: Missed 2 out of 14 days or 2/14.)
- Do you know when you'll next need lab work?
- Do you know the date of your next appointment?

*EHR = electronic health record

- contacting 80% of patients newly prescribed oral chemotherapy by the nurse coordinator (by phone or email) 7 to 14 days after medication initiation to evaluate for side effects and medication adherence
- ensuring that patients can state three common side effects of their prescribed medication and understand that they should contact the medical team when experiencing side effects
- ensuring 85% patient medication adherence as measured by self-report.

Project scope and design

The sample for this project included adult oncology patients recently prescribed oral chemotherapy in the outpatient setting at MGUH LCCC and 10 oncology nurse coordinators. Patients were included regardless of primary language, diagnosis, or cancer stage. Exclusion criteria included pediatric cancer patients, adult patients prescribed hormonal/endocrine therapy only, those enrolled in research protocols, and those who were admitted as inpatients when they started oral chemotherapy. The oncology nurse coordinators (many of them oncology certified nurses) work directly with medical oncologists, providing initial in-person education about oral chemotherapy at the medical oncology visit when it's first prescribed and meeting with patients at various points during care.

Data collected through random audits of the

electronic health record (EHR) were used to evaluate patients before (July 2016 to December 2016) and after (August 2017 to December 2017) the tool was implemented to assess improvement in their knowledge of side effects and medication adherence. A total of 45 audits of patient records were completed before implementation, with 45 audits performed after implementation. Comparisons were made using baseline data and data collected after intervention implementation to evaluate patient knowledge and the effectiveness of patient education. The date of initial prescription of oral chemotherapy was noted by viewing the "Rx/Prescription" tab in the EHR, and then the "Progress Notes" section was reviewed to determine if the oncology nurse coordinator documented communication with the patient to assess for side effects and if the patient knew who to contact if he or she experienced side effects.

Patient adherence was measured by asking patients open-ended questions derived from a validated tool. The nurse coordinators also asked patients during their calls if they had missed any medication doses since starting oral chemotherapy 7 to 14 days before. Adherence was assessed in 68 patients. Because the tracking tool was anonymous, some of the chart audits completed postintervention may have included some of these 68 patients.

In addition to these random chart audits, the

project investigator reviewed each oncology nurse coordinator's tracking tool 3 months after implementation to determine how many patients were contacted and if they could identify teaching conducted by the nurse coordinator at a prior visit.

Results

Pre- and postimplementation chart audits demonstrated that communication with patients 7 to 14 days after they began oral chemotherapy increased from 42.2% to 51.1%. Education on side effects documented in progress notes during calls showed a statistically significant increase of over 25% ($p = .010$). Before the intervention, only 15.6% of EHR progress notes about patient calls mentioned side effect discussions. After the intervention, 42% documented a discussion of side effects. A statistically significant increase (from 11.1% preintervention to 31.1% postintervention [$p = .037$]) also was noted in the number of patients who could identify when they should call their provider about side effects. The 89.7% self-reported adherence rate reported by this sample was higher than national rates, which can be as low as 46%.

Three months after implementing the oral chemotherapy tracking tool, the 10 oncology nurse coordinators participated in an anonymous paper survey at a staff meeting. (See *Nurse coordinator survey*.) Descriptive statistics were used to evaluate sur-

Nurse coordinator survey

This anonymous survey was given to the 10 oncology nurse coordinators 3 months after implementation of the tracking tool.

Question	Please circle or write your answer
1 Are you aware of the new outpatient oral chemotherapy tracking tool our clinic is trialing?	1. Yes 2. No
2 Have you found this tool helpful in monitoring and assessing your patients who are self-administering oral chemotherapy at home?	1. Yes 2. No
3 Have you found this tool helpful when covering other oncology nurse coordinators whose patients have been prescribed oral chemotherapy?	1. Yes 2. No 3. Not applicable 4. Not sure
4 Have you found this tool to be helpful in your electronic health record (EHR) documentation of patients prescribed oral chemotherapy?	1. Yes 2. No 3. Not applicable 4. Not sure
5 How can this tool be improved?	

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vey data. The results showed that all were aware of the tool and how to use it, and 80% found it helpful when monitoring patients receiving oral chemotherapy and in their EHR documentation.

Some comments from the nurse coordinators included: “Helpful to keep tracking new patients to make sure they start and receive their drugs” and “It was helpful in tracking and reminding me of who is on oral therapies.” One nurse coordinator commented that tracking medication adherence so soon after initiation “was not necessarily informative because patients were so early in treatment that they had not missed a dose” and one suggested that “doing a check-in at a later point, like 30 days, would be better.” Another nurse coordinator said that it would have been helpful to have the tool integrated into the online EHR database.

Filling a gap

This QI project sought to implement a structured set of guidelines in the form of a standardized tracking tool to meet evidence-based standards recommended by ONS and ASCO with regard to side effect and medication adherence monitoring. The piloted tool proved to be an effective way to facilitate care coordination in a large cancer center clinic, and improvements will be made based on nurse coordinator feedback. This tracking tool can be easily adopted by other practices to promote continuity of care. ■

Kristin M. Ferguson is the clinical operations manager at MedStar Georgetown University Hospital, Lombardi Comprehensive Cancer Center, in Washington, DC. Laurie J. Dohnalek is the nursing director in oncology, medicine, and emergency services at MedStar Georgetown University Hospital. Susan S. Moreland is a nurse practitioner at Annapolis Internal Medicine in Annapolis, Maryland. Susan M. Schneider is an associate professor and lead faculty oncology nursing specialty at Duke University in Durham, North Carolina.

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