

Patient-Oncologist Communication Regarding Oral Chemotherapy During Routine Office Visits

Bobbie K. H. Nguyen, BA¹; Benjamin S. Wu, PharmD¹; Hanna K. Sanoff, MD, MPH²; and Jennifer Elston Lafata, PhD^{1,2}

QUESTION ASKED: How are oncologists addressing medication counseling of patients with colorectal cancer prescribed oral capecitabine during office visits?

SUMMARY ANSWER: By evaluating audio recordings of oncology office visits, we identified several potentially important opportunities to enhance oncologists' medication counseling. Among these is the opportunity for oncologists to assess how patients are taking prescribed therapy and to offer strategies to manage adverse-effect symptoms to patients before they present with symptom burden.

WHAT WE DID: We developed a structured coding worksheet to identify and describe the medication counseling content present in patient-oncologist office visit discussions. The worksheet included medication-counseling concepts previously advocated to support medication adherence, including adverse-effect management, concurrent medication management, and the provision of pertinent medication information.

WHAT WE FOUND: Oncologists provided patients initiating oral capecitabine therapy comprehensive information about the medication. Once a patient initiated therapy, important information such as how the patient was taking the medication or how to manage adverse effects preemptively often was not discussed. In addition, no encounter included a discussion of a support program or referral to others available to assist with medication management.

BIAS, CONFOUNDING FACTORS: Although visits were drawn from a national sample, results of this study are specific to a small sample of oncologists and office visits. As such, they may not represent the full spectrum of medication counseling provided by oncologists.

REAL-LIFE IMPLICATIONS: Oncology practices may benefit from implementing specific protocols in which patients not only are educated and routinely asked about their ability to adhere to prescribed oral chemotherapy but also equipped to identify and manage associated adverse effects before they progress in severity.

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Author affiliations and disclosures are available with the complete article at ascopubs.org/journal/op.

Accepted on January 22, 2020 and published at ascopubs.org/journal/op

on March 2, 2020: DOI <https://doi.org/10.1200/JOP.19.00550>

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abstract

PURPOSE Although studies in other clinical areas have shown that patient-clinician communication can positively influence adherence to medications, little is known about how oncologists address medication counseling during routine office visits. We describe patient-oncologist office-based discussions of oral chemotherapy treatment.

METHODS Transcripts of 24 patient-oncologist office visits were obtained from a national database. Patients were aged ≥ 19 years and prescribed capecitabine for colorectal cancer. We developed a structured coding worksheet using medication-counseling concepts previously identified as important to medication adherence and a grounded approach. Two coders reviewed transcripts for oncologists' provision of medication information, assessment of patients' adherence to medication, and the provision of self-management support for management of adverse effects. We assessed interrater reliability with Cohen κ statistics. We describe the counseling concepts present within patient-oncologist conversations and present illustrative quotes to describe how they were discussed.

RESULTS Oncologists generally provided patients who had yet to initiate therapy comprehensive medication information; those in the midst of treatment received less information. Oncologists discussed patients' continued use of the medication (or discontinuation) among all patients who had initiated therapy (N = 18). How the patient was taking the medication (ie, therapy implementation) was less commonly discussed. Medication adverse effects were also discussed in all encounters. Self-management strategies were commonly provided, albeit mostly in response to a presenting symptom and not preemptively. Patients' use of concurrent medications, financial access to therapy, and assessments of logistical arrangements were discussed more sporadically.

CONCLUSION Using audio recordings from a national sample of patient-oncologist office visits, we identified several potentially important opportunities to enhance medication counseling among patients prescribed capecitabine for the treatment of colorectal cancer.

JCO Oncol Pract 16:e660-e667. © 2020 by American Society of Clinical Oncology

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INTRODUCTION

As oral chemotherapy agents are increasingly developed and used, pharmacotherapy in oncology care is shifting from intravenous formulations administered under the close and watchful eye of clinicians to therapies that are self-administered in the privacy of a patient's home.¹ With this shift comes the need for oncologists to assess and support medication adherence in addition to managing treatment toxicities.² National practice standards and guidelines have been published to aid oncology practices in the safe administration and management of oral chemotherapy.^{3,4}

Despite the known importance of medication counseling to patient adherence and safe medication practices, medical record documentation is known to be incomplete for medication counseling,⁵ and little is known about how oncologists address medication counseling during routine office visits.

Medication adherence is the process by which patients take their medications as prescribed, including whether a patient initiates taking the medication, how they implement taking the medication, and whether they discontinue taking the medication.⁶ Recent studies have revealed adherence to oral chemotherapies

Author affiliations and support information (if applicable) appear at the end of this article.

Accepted on January 22, 2020 and published at ascopubs.org/journal/op on March 2, 2020; DOI <https://doi.org/10.1200/JOP.19.00550>

to be highly variable, ranging from as low as 23% to as high as 97%.⁷ Several factors have been associated with non-adherence, including adverse effects, concomitant drug burden, and low levels of social support.⁸ Many cancer hospitals and other oncology care providers have developed interventions that specifically target those receiving oral chemotherapy.⁹ Studies of these interventions have highlighted their inconsistent ability to enhance patients' medication adherence as well as challenges accompanying attempts to support self-administered cancer therapy.^{10,11} Although a recent systematic review illustrated the potential for pharmacy-led interventions to reduce treatment-related adverse effects and improve medication adherence,¹² the poor quality of those studies reviewed, and those included in other similar reviews,^{10,11} simultaneously highlight ongoing gaps in knowledge.

Oral chemotherapy is unique in its frequent use of repeated treatment-rest cycles, concerns regarding toxicity, evidence of overuse, and need for ongoing symptom monitoring—all of which make counseling needs complex. Capecitabine is no exception. An oral chemotherapy agent that is dosed on the basis of a patient's weight and height, capecitabine is similar to other oral chemotherapies in it is taken twice per day on a schedule of 2 weeks on and 1 week off.¹³ It has been reported to be both under- and overused by patients.¹⁴⁻²²

Although multiple clinicians often are involved in a patient's care in the oncology setting, patients with cancer report physicians as their primary source of information regarding chemotherapy.²³ Importantly, a recent study found patients with cancer who reported high satisfaction with the information they received regarding the impact of their therapy were more adherent to their therapy.⁸ This finding is consistent with that from other clinical contexts where patient-physician communication repeatedly has been found to be associated with patients' adherence to prescribed medications.^{24,25} Despite the likely importance of oncologist communications to oral chemotherapy adherence, to our knowledge, no prior study has used observation of oncologist-patient office-visit conversations to understand how oncologists assess and support patient adherence to oral chemotherapy.

Using audio recordings for patients with colorectal cancer identified from the Verilogue Point-of-Practice database (Verilogue, Philadelphia, PA), we describe patient-oncologist office-based discussions of oral chemotherapy treatment. Of particular interest was the extent to which oncologists provide medication information (ie, medication name, purpose, dosage, duration, and adverse effects) and offer strategies for managing medication adverse effects. We also describe how oncologists assess their patients' adherence to prescribed oral chemotherapy.

METHODS

Study Population and Data Source

The Verilogue Point-of-Practice database is described in detail elsewhere.²⁶⁻²⁹ In brief, Verilogue staff identify and recruit physicians from diverse practices and specialties to develop the Point-of-Practice database. Only patients who consent to having their encounter audio-recorded are included in the database.

For this study, Verilogue staff identified 25 outpatient encounters with a medical oncologist in the United States between January 1, 2014, and December 31, 2017, for which the patient (1) was aged ≥ 19 years, (2) was diagnosed with colorectal cancer, and (3) had capecitabine listed as a current treatment. In addition to audio recordings and transcripts, the Verilogue database contains structured information on the patient's sex, race, age, and current chemotherapy medications, as well as the treating oncologist's sex and years in practice. The Institutional Review Board at the University of North Carolina at Chapel Hill approved this study as exempt.

Qualitative Content Analysis

Using Qualtrics (Provo, UT) software (<https://www.qualtrics.com/>), we developed a structured coding worksheet to identify and describe the medication counseling content present in patient-oncologist office visit discussions. To develop the coding items, we initially used results from a scoping review we are completing to determine the content of patient-clinician communication previously evaluated for its association with oral chemotherapy adherence. This resulted in the inclusion of codes specific to the assessment and management of adverse effects, financial access assistance, logistical assistance accessing the medication, and concurrent medication management. In addition, to capture the comprehensiveness of the medication information provided by the oncologist, we used the Medication Communication Index.³⁰ The Medication Communication Index includes items for the clinician's provision of medication name, purpose or justification, duration, adverse effects, and dosage. Finally, for medication adherence assessment, we considered the conceptual framework proposed by Vrijens et al⁶ to code both therapy continuation and implementation. An assessment of continuation was captured if the oncologist asked the patient about his or her continued use of capecitabine or willingness to complete a subsequent treatment cycle(s). Implementation assessments were recorded if the oncologist asked the patient or the patient volunteered information about missed doses, doses taken per day, or modifications to their medication-taking behavior. We also included an item to capture whether the oncologist, patient, or both mentioned the availability of a separate program or staff member available to provide medication assistance or support. A number of these codes are consistent with the ASCO Quality Oncology Practice

Initiative Certification Program Standards (eg, evaluation of treatment-related toxicities and patient adherence when chemotherapy is administered outside the health care setting).³ In addition to using these a priori determined components of medication counseling, research team members iteratively read and identified themes from batches of two office-visit transcripts independently and then met to discuss identified themes. Using this approach, we developed codes to capture details regarding the content of adverse effect–management discussions. For example, we developed items specific to each body system that captured whether an adverse effect was discussed and/or endorsed as present by the patient, and whether self-management strategies specific to that adverse effect were discussed. We also developed a code for the discussion of treatment phase (ie, pretreatment initiation, mid-treatment course, or posttreatment), and concomitant infused chemotherapy use. Each item was coded as having occurred regardless of who initially raised the topic.

Coding was completed in rounds, with two coders (B.K.H.N. and B.S.W.) iteratively coding five transcripts independently and then meeting to discuss results. Within each round, coders reviewed two of the same transcripts. Another laboratory member calculated interrater reliability scores for the double-coded transcripts (n = 5).³¹ The Cohen κ was calculable for 24 items. For items for which the Cohen κ statistic was < 0.55 (n = 4), we recoded the items using consensus coding. For the other items, the κ score ranged from 0.55 to 1.00 (mean, 0.87). For additional items (n = 19) for which insufficient variability existed in the coded responses for a Cohen κ to compute, percent agreement between the two coders was 100% for each item.

RESULTS

Study Population

Twenty-four encounters were included in the analyses: one encounter was with a patient who had completed capecitabine therapy and, therefore, was excluded. The demographic and clinical characteristics of the patient sample are presented in Table 1. Patients were seen by 17 oncologists who were primarily male (n = 15) and practicing between 3 and 10 years (n = 11). Office-visit recordings ranged in length from 3 to 35 minutes, averaging 14 minutes (median, 10 minutes).

Medication Information

All visits included the word “capecitabine” or its brand name. All visits also included a discussion of associated adverse effects. Over the course of a visit, patients who had not initiated therapy were generally provided the recommended basic elements of medication information (eg, medication name, dosing frequency, therapy duration, number of tablets per dose, adverse effects). Conversely, office-visit discussions for patients in the midst of their treatment course contained less of this information. For example, patients who

TABLE 1. Patient Sample Characteristics (N = 24)

Characteristic	No. (%)
Age, years	
19-34	1 (4)
35-54	7 (29)
55-74	10 (42)
≥ 75	6 (25)
Sex	
Male	9 (38)
Female	15 (62)
Race	
White	19 (79)
Other	5 (21)
Treatment status	
Pretreatment initiation	5 (21)
Midtreatment	18 (75)
Unknown	1 (4)
Concomitant infusions	
Bevacizumab	2 (8)
Fluorouracil	1 (4)
Irinotecan	1 (4)
Oxaliplatin	10 (42)
None	11 (46)
Caregiver/family member present	12 (50)

were midcourse in their treatment were often not reminded of the purpose of the medication or the planned duration of therapy. Nor were they commonly counseled on either the prescribed frequency of medication administration or the number of tablets to take for each dose.

Therapy Continuation and Implementation

All patients who had initiated capecitabine were assessed for their continued use of the medication. Most encounters included a brief assessment only, such as:

Oncologist: So you continue taking [capecitabine] by mouth?

Patient: That is correct. (case 541, midtreatment).

On the other hand, oncologists’ assessments of therapy implementation (eg, missed doses) among patients who had initiated therapy were more sporadic, and when such discussions occurred, they varied in scope. These discussions ranged from simple, seemingly incidental statements from the patient that a dose had been missed to in-depth assessments initiated by the oncologist that specifically asked about medication-taking behavior. The following quoted conversations illustrate such variability.

Oncologist: Okay. And let’s go ahead. This will be cycle number four. Okay, let’s see if we have the orders in.

Yep, we have the orders in and everything, and you have your [capecitabine]?

Patient: Yes.

Oncologist: Excellent.

Patient: Yeah, I missed a day in, uh, because they made, well they called, I ordered it on Thursday [inaudible]. Tuesday. (case 43322, midtreatment).

Oncologist: And you're taking, um, three in the morning and three in the evening?

Patient: Yes.

Oncologist: Okay, so it's been 7 days already and when will you finish? See it over there? [date] so Tuesday, last Tuesday is when you started?

Patient: Yes.

Oncologist: So it's going to be probably [date] will be, the, [date] will be the last one, right? That's what I'm thinking. (case 61386, midtreatment).

Management of Adverse Effects

At least one adverse effect was discussed in all encounters, commonly GI system–related adverse effects. Encounters with patients who had yet to initiate treatment discussed common adverse effects reported with capecitabine and included a discussion of self-management strategies to try should the patient become symptomatic. Once therapy had been initiated, discussion of self-management strategies in absence of symptom presentation was rare. Instead, once therapy had been initiated, adverse-effect self-management strategies were offered in a reactive fashion (ie, only when the patient endorsed having the adverse effect). For example, one patient was provided with the following suggestion:

Patient: My tongue on both sides was sore like I'd bitten it, but I hadn't.

Oncologist: Have you ever tried some saltwater with . . . bicarbonate and just swishing it around and spitting it out? (case 19249, midtreatment).

Concurrent Medication Management

Patients' use of concurrent oral medications was also discussed. These discussions typically focused on patients' use of medications for the management of capecitabine's adverse effects (eg, acetaminophen, loperamide, iron supplements). Discussion of medications for a comorbid condition was rare. The following quoted conversation illustrates a typical discussion of concurrent medications:

Patient: I'm doing good.

Oncologist: Any problems?

Patient: Well, I've been nauseous.

Oncologist: A little bit of nausea. Are you taking your [prochlorperazine]?

Patient: Yes, I need to get a refill on it, too. (case 1207, midtreatment).

Medication Access

Discussions regarding how medications would be obtained and other logistical assessments were common. These types of assessments were directed primarily at the

oncologist trying to understand when the medication would be in the patient's possession. For example, oncologists often coordinated subsequent visits on the basis of the patient's access to capecitabine. For example:

Oncologist: . . . how many days does it take for the pharmacy to deliver the medicine?

Patient: Um, a couple of days.

Oncologist: Yeah. That's fine?

Patient: Yeah. That's a couple of days.

Oncologist: Okay, so why don't we get together that Monday. Um, we'll just make sure everything is fine and then order the next [cycle]. (case 62823, midtreatment).

In four office visits, we observed an oncologist inquiring about the patient's financial access to capecitabine: three encounters with patients who had yet to initiate therapy and once with a patient in midcourse of therapy.

References to Other Available Programs and/or Clinician Support

No encounter contained a discussion of another medication support program or other clinician who might be available to the patient or their caregiver(s) to assist with medication management or support.

DISCUSSION

Patient medication adherence is a common and costly challenge that is relatively new within the context of oncology care.³² Using audio recordings from a national sample of oncology office visits, we identified the content of and gaps in routine medication counseling received by patients with colorectal cancer who were prescribed capecitabine. We found that although virtually all patients discussed continuation of their oral chemotherapy with their oncologist, discussions addressing whether patients were taking their chemotherapy as prescribed were less commonplace. Likewise, although we found all office visits included discussion of the common adverse effects of therapy, discussion of self-management strategies patients could use were more varied and rarely were provided preemptively once therapy was initiated. Instead, once a patient initiated therapy, self-management strategies seemed to be provided to patients only after they presented with an adverse effect.

Our findings illustrate that oncologists commonly engage in medication counseling with their patients prescribed capecitabine. Yet, the counseling we observed was often void of recommended best practices. For example, oncologists often did not directly ask patients about their therapy implementation (eg, whether they missed, skipped, or cut doses). By not asking about therapy implementation, oncologists place the responsibility of reporting nonadherence on the patient. Because patients may not understand the importance of disclosing medication adherence behaviors and/or be comfortable divulging

challenges with medication adherence, oncologists who do not inquire about a patient's medication-taking behaviors before making treatment changes may be making dose adjustments and other decisions on the basis of erroneous or incomplete information. In the oncology setting where medication overuse and underuse are known to exist,^{18-22,33} failure to inquire about medication adherence could lead to avoidable treatment toxicities as well as avoidable disease progression or even premature death. Standards put forth by ASCO and others^{3,4} clearly advocate for the periodic assessment of not only whether a patient continues to take their prescribed medication but how they are taking it. As evidenced by commonly used medication counseling strategies, such discussions should include periodic assessments of the barriers patients may face in taking prescribed medications as directed.¹⁰

Although oncologists consistently inquired about the presence of adverse effects, they often did not provide patients with a self-management strategy before the patient presented with a symptom. Such an omission is increasingly costly not only to the well-being of patients but also to organizations responsible for delivering their care; studies have repeatedly found adverse effects to be a contributing factor in costly visits to the emergency department among patients with cancer being treated with chemotherapy.³⁴⁻³⁶ In addition to adhering to national quality standards, oncology practices may implement specific protocols for building knowledge about the patients' ability to take their prescribed chemotherapy properly and also identifying and managing the therapy's associated adverse effects before they progress in severity. This presents an opportunity to use other members of the health care team, such as pharmacists, in the patient's oncologic care. Some pharmacist-led interventions have been successful in the early detection of adverse effects and, subsequently, lower hospitalization rates.³⁷⁻⁴⁰

To our knowledge, our study is the first to use office-visit audio recordings to evaluate patient-oncologist medication counseling discussions within oncology care. Despite the advantages of such observational data from an existing database of national scope, its use introduces a number of limitations. First, although visits were drawn from a national sample, office visits represent a convenience sample of

oncology visits and observed discussions may not be representative of oncologist medication counseling more broadly. Compounding this limitation is our inability to describe either the patient or oncologist sample in more detail. As such, we are not able to provide additional contextual information regarding either patients' clinical (eg, where within a treatment course patients were or their prescribed dosing) or social (eg, educational attainment or health literacy) characteristics. In addition, because oncology care usually is provided by clinical teams that include advanced practitioners and pharmacists, by focusing solely on patient-oncologist discussions, we may miss important medication counseling delivered by others. As such, we cannot draw conclusions regarding all medication counseling received by patients with cancer but only that provided by an oncologist during office visits. Nonetheless, the counseling received during such visits seems particularly relevant both because of the importance patients place on this as an information source²³ and because of the need for physicians to understand patient medication adherence before altering therapy. Future longitudinal studies focusing on medication counseling delivered by other members of the oncology care team are needed to provide further insight into these issues. Of note, however, is that no patient-oncologist discussion mentioned a medication support program or other clinician available to assist the patient with their medications. In addition, although the importance of patient-physician office-visit communication to patient outcomes in other clinical contexts has been shown,^{24,25} a limitation of the current study is the inability to link identified communication behaviors with patient adherence and other outcomes.

Using audio recordings from a national sample of patient-oncologist office visits, we identified a number of potentially important opportunities to enhance oncologists' medication counseling. Among these is the opportunity for oncologists to assess how patients are taking prescribed therapy and to offer adverse effect symptom-management strategies to patients before they present with symptom burden. As reliance on oral cancer treatment expands, it is increasingly important to understand how patient-oncologist office visit discussions can best support patients' adherence to oral chemotherapy treatment.

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SUPPORT

Supported by UNC Lineberger Comprehensive Cancer Center and UNC Eshelman School of Pharmacy, both of University of North Carolina at Chapel Hill.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST AND DATA AVAILABILITY STATEMENT

Disclosures provided by the authors and data availability statement (if applicable) are available with this article at DOI <https://doi.org/10.1200/JOP.19.00550>.

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ACKNOWLEDGMENT

We gratefully acknowledge Patrice Fleming for her assistance evaluating inter-rater reliability, and the assistance of Matthew Dixon, Rachel Parry, and Joshua Brown with database and codebook development.

REFERENCES

- Hoelder S, Clarke PA, Workman P: Discovery of small molecule cancer drugs: Successes, challenges and opportunities. *Mol Oncol* 6:155-176, 2012
- Darkow T, Henk HJ, Thomas SK, et al: Treatment interruptions and non-adherence with imatinib and associated healthcare costs: A retrospective analysis among managed care patients with chronic myelogenous leukaemia. *Pharmacoeconomics* 25:481-496, 2007
- American Society of Clinical Oncology: Quality Oncology Practice Initiative (QOPI) Certification Program. <https://practice.asco.org/quality-improvement/quality-programs/qopi-certification-program>
- Neuss MN, Gilmore TR, Belderson KM, et al: 2016 Updated American Society of Clinical Oncology/Oncology Nursing Society chemotherapy administration safety standards, including standards for pediatric oncology. *Oncol Nurs Forum* 44:31-43, 2017
- Stange KC, Zyzanski SJ, Smith TF, et al: How valid are medical records and patient questionnaires for physician profiling and health services research? A comparison with direct observation of patients visits. *Med Care* 36:851-867, 1998
- Vrijens B, De Geest S, Hughes DA, et al: A new taxonomy for describing and defining adherence to medications. *Br J Clin Pharmacol* 73:691-705, 2012
- Huang WC, Chen CY, Lin SJ, et al: Medication adherence to oral anticancer drugs: Systematic review. *Expert Rev Anticancer Ther* 16:423-432, 2016
- Efficace F, Baccarani M, Rosti G, et al: Investigating factors associated with adherence behaviour in patients with chronic myeloid leukemia: An observational patient-centered outcome study. *Br J Cancer* 107:904-909, 2012
- Zerillo JA, Goldenberg BA, Kotecha RR, et al: Interventions to improve oral chemotherapy safety and quality: A systematic review. *JAMA Oncol* 4:105-117, 2018
- Greer JA, Amoyal N, Nisotel L, et al: A systematic review of adherence to oral antineoplastic therapies. *Oncologist* 21:354-376, 2016
- Mathes T, Antoine S-L, Pieper D, et al: Adherence enhancing interventions for oral anticancer agents: A systematic review. *Cancer Treat Rev* 40:102-108, 2014
- Colombo LRP, Aguiar PM, Lima TM, et al: The effects of pharmacist interventions on adult outpatients with cancer: A systematic review. *J Clin Pharm Ther* 42: 414-424, 2017
- XELODA(R) oral tablets, capecitabine oral tablets [package insert]. South San Francisco, CA, Genentech USA, 2009
- Verbrugge M, Verhaeghe S, Lauwaert K, et al: Determinants and associated factors influencing medication adherence and persistence to oral anticancer drugs: A systematic review. *Cancer Treat Rev* 39:610-621, 2013
- Ruddy K, Mayer E, Partridge A: Patient adherence and persistence with oral anticancer treatment. *CA Cancer J Clin* 59:56-66, 2009
- Barthélémy P, Asmane-De la Porte I, Meyer N, et al: Adherence and patients' attitudes to oral anticancer drugs: A prospective series of 201 patients focusing on targeted therapies. *Oncology* 88:1-8, 2015
- Margolis J, Princic N, Doan J, et al: Analysis of real-world treatment adherence in a cohort of 2,395 patients with metastatic renal cell carcinoma (mRCC). *J Clin Oncol* 34:517, 2016 (2_suppl)
- Bhattacharya D, Easthall C, Willoughby KA, et al: Capecitabine non-adherence: Exploration of magnitude, nature and contributing factors. *J Oncol Pharm Pract* 18:333-342, 2012
- Mayer EL, Partridge AH, Harris LN, et al: Tolerability of and adherence to combination oral therapy with gefitinib and capecitabine in metastatic breast cancer. *Breast Cancer Res Treat* 117:615-623, 2009
- Le Saux O, Bourmaud A, Rioufol C, et al: Over-adherence to capecitabine: A potential safety issue in breast and colorectal cancer patients. *Cancer Chemother Pharmacol* 82:319-327, 2018
- Timmers L, Boons CC, Mangnus D, et al: Adherence and patients' experiences with the use of capecitabine in daily practice. *Front Pharmacol* 7:310, 2016
- Krolop L, Ko YD, Schwindt PF, et al: Adherence management for patients with cancer taking capecitabine: A prospective two-arm cohort study. *BMJ Open* 3: e003139, 2013
- Mulneh B, Deal A, Alexander MD, et al: Patient perspectives on the barriers associated with medication adherence to oral chemotherapy. *J Oncol Pharm Pract* 24:98-109, 2018
- Beach MC, Roter DL, Saha S, et al: Impact of a brief patient and provider intervention to improve the quality of communication about medication adherence among HIV patients. *Patient Educ Couns* 98:1078-1083, 2015
- Patel NJ, Datye KA, Jaser SS: Importance of patient-provider communication to adherence in adolescents with type 1 diabetes. *Healthcare (Basel)* 6:1-12, 2018
- Hunter WG, Hesson A, Davis JK, et al: Patient-physician discussions about costs: Definitions and impact on cost conversation incidence estimates. *BMC Health Serv Res* 16:108, 2016
- Hunter WG, Zhang CZ, Hesson A, et al: What strategies do physicians and patients discuss to reduce out-of-pocket costs? Analysis of cost-saving strategies in 1,755 outpatient clinic visits. *Med Decis Making* 17-19: 2016
- Brenner AT, Malo TL, Margolis M, et al: Evaluating shared decision making for lung cancer screening. *JAMA Intern Med* 178:1311-1316, 2018
- Goff SL, Mazor KM, Ting HH, et al: How cardiologists present the benefits of percutaneous coronary interventions to patients with stable angina: A qualitative analysis. *JAMA Intern Med* 174:1614-1621, 2014
- Tarn DM, Heritage J, Paterniti DA, et al: Physician communication when prescribing new medications. *Arch Intern Med* 166:1855-1862, 2006
- McHugh ML: Interrater reliability: The kappa statistic. *Biochem Med (Zagreb)* 22:276-282, 2012

32. Marcum ZA, Driessen J, Thorpe CT, et al: Effect of multiple pharmacy use on medication adherence and drug-drug interactions in older adults with Medicare Part D. *J Am Geriatr Soc* 62:244-252, 2014
33. Spoelstra SL, Given BA, Given CW, et al: An intervention to improve adherence and management of symptoms for patients prescribed oral chemotherapy agents: An exploratory study. *Cancer Nurs* 36:18-28, 2013
34. Mayer DK, Travers D, Wyss A, et al: Why do patients with cancer visit emergency departments? Results of a 2008 population study in North Carolina. *J Clin Oncol* 29:2683-2688, 2011
35. Kotajima F, Kobayashi K, Sakaguchi H, et al: Lung cancer patients frequently visit the emergency room for cancer-related and -unrelated issues. *Mol Clin Oncol* 2:322-326, 2014
36. Siefert ML, Bonquist TM, Berry DL, et al: Symptom-related emergency department visits and hospital admissions during ambulatory cancer treatment. *J Community Support Oncol* 13:188-194, 2015
37. Khandelwal N, Duncan I, Ahmed T, et al: Oral chemotherapy program improves adherence and reduces medication wastage and hospital admissions. *J Natl Compr Canc Netw* 10:618-625, 2012
38. Lam MSH, Cheung N: Impact of oncology pharmacist-managed oral anticancer therapy in patients with chronic myelogenous leukemia. *J Oncol Pharm Pract* 22:741-748, 2016
39. Ribed A, Romero-Jiménez RM, Escudero-Vilaplana V, et al: Pharmaceutical care program for onco-hematologic outpatients: Safety, efficiency and patient satisfaction. *Int J Clin Pharm* 38:280-288, 2016
40. Simons S, Ringsdorf S, Braun M, et al: Enhancing adherence to capecitabine chemotherapy by means of multidisciplinary pharmaceutical care. *Support Care Cancer* 19:1009-1018, 2011



AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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Benjamin S. Wu

Employment: GlaxoSmithKline

Hanna K. Sanoff

Research Funding: Bayer (Inst)

No other potential conflicts of interest were reported.