Evaluating the Impact of Treatment Care Planning on Quality Measures

By: Gabrielle B. Rocque, Courtney P. Williams, Amanda R. Hathaway, Karina I. Halilova, Carrie T. Stricker, Nicholas C. Coombs, William N. Dudley, Kathryn A. Thomas, Michele Gaguski, Stéphanie Crist, Mary May Kozlik, Patti Larkin, Austin Cadden, and Meredith I. Jones

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Abstract:

PURPOSE: The Center for Medicare & Medicaid Innovation Oncology Care Model (OCM) requires documentation of a 13-point Institute of Medicine care management plan for Medicare patients. In addition, OCM includes evaluation of quality using key performance measures that align with the ASCO Quality Oncology Practice Initiative (QOPI). Both efforts are designed to improve patient-centered care and foster patients' engagement in their care plan. METHODS: A multicenter quality improvement project was conducted to develop a strategy to meet the OCM treatment planning (TP) requirement (Plan), pilot clinician education coupled with use of electronic TP in early-stage breast cancer (Do), evaluate the impact of TP on QOPI measures (Study), and develop recommendations for future implementation (Act). RESULTS: Thirty-three clinical providers and 171 women with breast cancer were included. Improved performance on several QOPI measures was observed for the intervention group compared with the historical control group. CONCLUSION: Meeting the OCM TP requirement through incorporating a technology solution provided an opportunity for quality improvement and preparation for full-scale TP within the OCM. TP delivery was associated with improved performance on select ASCO QOPI measures, which is likely to correspond with improved performance on quality measures within OCM.

Keywords: oncology | treatment planning | patient-centered care | cancer

Article:

*****Note: Full text of article below**

original contribution

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QUESTION ASKED: Does implementation of treatment plans (TPs) improve performance on ASCO Quality Oncology Practice Initiative (QOPI) measures?

SUMMARY ANSWER: Implementation of electronic TPs, which included patient-reported outcome (PRO) data, improved performance on some ASCO QOPI measures.

WHAT WE DID: We used a Plan-Do-Study-Act cycle to conduct a multicenter quality improvement project implementing TPs, which met Oncology Care Model (OCM) requirements in patients with early-stage breast cancer. We evaluated the impact of TPs on QOPI measures and developed recommendations for future implementation.

WHAT WE FOUND: This quality improvement project engaged 33 clinical providers and 171 women with breast cancer. We found improved performance on several QOPI measures for the intervention group compared with the historical control group. The measures with greatest change addressed management of pain, emotional distress, and documentation of advanced directives.

BIAS, CONFOUNDING FACTORS, DRAWBACKS: This study did not meet the desired accrual because one site transitioned to standard-of-care TP delivery before project completion. This specific TP intervention includes a PRO component; thus, it is difficult to assess whether the PROs alone or within the TP drove improvement. In addition, we could not discern differences on the basis of documentation versus change in practice. Finally, we did not collect data on use of TPs at later encounters, so it is not possible to discern the long-term impact.

REAL-LIFE IMPLICATIONS: This treatment planning approach, which included PROs, was implemented across three sites and improved select QOPI measures. Given the OCM requirement for TPs, this highlights the possibility to use OCM requirements as an opportunity to improve quality of care delivery.

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FOCUS ON QUALITY

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abstract

PURPOSE The Center for Medicare & Medicaid Innovation Oncology Care Model (OCM) requires documentation of a 13-point Institute of Medicine care management plan for Medicare patients. In addition, OCM includes evaluation of quality using key performance measures that align with the ASCO Quality Oncology Practice Initiative (QOPI). Both efforts are designed to improve patient-centered care and foster patients' engagement in their care plan.

METHODS A multicenter quality improvement project was conducted to develop a strategy to meet the OCM treatment planning (TP) requirement (Plan), pilot clinician education coupled with use of electronic TP in early-stage breast cancer (Do), evaluate the impact of TP on QOPI measures (Study), and develop recommendations for future implementation (Act).

RESULTS Thirty-three clinical providers and 171 women with breast cancer were included. Improved performance on several QOPI measures was observed for the intervention group compared with the historical control group.

CONCLUSION Meeting the OCM TP requirement through incorporating a technology solution provided an opportunity for quality improvement and preparation for full-scale TP within the OCM. TP delivery was associated with improved performance on select ASCO QOPI measures, which is likely to correspond with improved performance on quality measures within OCM.

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INTRODUCTION

In 2011, the Institute of Medicine (IOM) called for all patients with cancer to receive patient-centric treatment planning (TP), including an IOM care management plan with the following 13 required components: diagnosis; treatment; goals of therapy; advanced care planning; expected course of physical, practical, and psychosocial effects; and resources for prevention and mitigation.[1] In 2016, the Center for Medicare & Medicaid Innovation Oncology Care Model (OCM) required documentation of IOM plans for Medicare beneficiaries. In addition, OCM measures key performance indicators, many of which align with the ASCO Quality Oncology Practice Initiative (QOPI).[2,3]

In 2015, the University of Alabama at Birmingham (UAB), University of South Alabama Mitchell Cancer Institute (MCI), and AtlantiCare Cancer Care Institute (ACCI) applied for participation in OCM. These three cancer centers believed that leveraging the OCM requirement of TP delivery would create an opportunity to improve care quality. After evaluating their current care practices and resources, the centers partnered with Carevive Systems, a third-party technology solution that incorporates patient-reported outcomes (PROs) into treatment and survivorship planning documents. The centers hypothesized that provider education coupled with electronic TP use for patients with early-stage breast cancer would improve performance on QOPI measures.[3,4] This study evaluated the goal of improving performance on QOPI quality metrics through TP delivery using the Plan, Do, Study, Act (PDSA) model.[5]

METHODS

Study Overview

This pre– and post–quality improvement project from Fall 2015 through Spring 2016 used a PDSA cycle to

ASSOCIATED CONTENT

Data Supplement

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

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evaluate the impact of provider education coupled with electronic TP delivery on QOPI measure performance. Institutional review boards at each participating cancer center approved this study.

Participants

Providers. UAB and MCI are academic medical centers. ACCI is a community hospital–based medical oncology practice. Physicians, nurse practitioners, nurses, and other clinical staff who delivered care for patients with breast cancer were eligible to participate in provider education on breast cancer treatment, supportive care, and quality standards.

Patients. For the intervention group, women ages 18 and older with stage I to III breast cancer were identified through screening of clinic lists. Patients who had planned for or were receiving chemotherapy treatment were approached for participation at their first or second medical oncology visit. Patients unable to speak English were excluded. Intervention patients provided informed consent. A historical control group of consecutive patients with breast cancer who received chemotherapy and who were treated before initiation of TPs at each cancer center was identified using medical record review. A waiver of consent was granted for patients in the control group. The target accrual goal was 90 intervention and 90 control group patients across sites.

Intervention

This study used a two-part clinical intervention, which combined a provider education intervention and patient TP delivery. For the provider education component, providers participated in an educational intervention of self-study, continuing medical education (CME) courses on quality standards relevant to human epidermal growth factor receptor 2–positive breast cancer and on psychosocial distress. These courses were chosen to highlight the need for distress screening and enhancing familiarity with quality improvement in addition to clinical updates in breast cancer treatment. For the TP component, patients in the intervention group completed the following electronic PRO (ePRO) surveys on a tablet that connected to the TP platform: family history, desire for future fertility, pain and National Comprehensive Cancer Network distress assessment, and Control Preferences Scale.[6,7] The research coordinator or nurse navigator abstracted clinical data elements (eg, cancer stage, biomarkers, hormone receptor status, age, date of diagnosis, and recommended treatment) for each participant from the electronic medical record (EMR) and then entered data into the TP platform. The ePRO and clinical data elements were processed through clinical algorithms to generate an evidence-based, patient-facing TP designed to improve patient understanding of and engagement in their own care (example TP shown in the Data Supplement). Participating providers reviewed the TPs, chose to accept or reject TP recommendations, and then finalized each TP. Hard copy TPs were handed directly to all intervention patients during a clinic visit. A copy of the TP also was sent electronically through either e-mail or patient portal for reference.

Outcomes

Fifteen QOPI measures from within the core, symptom, and breast modules were chosen for reporting because of their alignment with OCM measures. Data were abstracted from medical records and entered into the QOPI reporting system using the standard QOPI process during QOPI Fall 2015 (UAB control), Spring 2016 (UAB intervention, MCI control), and Fall 2016 (MCI intervention, ACCI intervention and control) rounds.

Statistical Analysis

Descriptive statistics were used to examine characteristics from the Carevive Systems platform. Continuous variables, including age and time since initial cancer diagnosis, were evaluated with means and standard deviations. Categorical variables, including chemotherapy status, pathologic staging, tumor pathology, and biomarker status, were evaluated with frequencies and percentages. A full description of the study sample is listed in Table 1. Comparison of compliance rates between treatment and control providers were evaluated using bivariate crosstabs with condition as the independent variable and compliance as the dependent variable, treating each QOPI variable independently. To account for reduced sample size on specific items, Fisher's exact test was used to evaluate statistical significance.

RESULTS

Study Population

Of 85 women approached, 74 (87%) chose to participate in the intervention (Table 1). Thirty-three providers and clinical staff participated in the CME activities, including 15 nurses, 13 physicians, two nurse practitioners, one pharmacist, and two other clinical practice staff. All providers participated in the CME education. Records of 86 patients from the historical control group also were abstracted.

Performance on Quality Measures

Table 2 lists the 15 selected QOPI measures for comparison between intervention and control group patients. Statistically significant differences were found on nine measures, with performance higher among those in the intervention group. Responses to questions that pertained to management of pain, emotional distress, and documentation of advanced directives had the greatest difference.

DISCUSSION

The cancer centers recognized the need to implement structured TP (Plan), pilot TP delivery (Do), evaluate the impact on quality measures (Study), and develop recommendations for future TP delivery at participating cancer centers (Act) as part of payment reform initiatives. Use of

TABLE 1. Patient Intervention Group Characteristics Taken From the Carevive Systems Platform

Characteristic	No. (%)
No. of patients	74
Mean age, years	55.4
Range	24-79
Standard deviation	11.2
Mean time since diagnosis, months	1.9
Range	0-21
Standard deviation	3.5
Chemotherapy status	
Planned but not started	56 (76)
Currently receiving	9 (12)
None planned	7 (9)
Missing	2 (3)
Pathologic staging	
I	19 (26)
II	34 (45)
III	19 (26)
Missing	2 (3)
Tumor pathology	
Invasive ductal carcinoma	30 (40)
Invasive lobular carcinoma	6 (8)
Mixed ductal and lobular carcinoma in situ	3 (4)
Other pathology	5 (7)
Unknown at time of study	28 (38)
Missing	2 (3)
Biomarker status*	
HR+ HER2−	29 (39)
HR+ HER2+	16 (21)
HR− HER2+	8 (11)
Triple negative (HR−, HER2−)	18 (25)
Missing	3 (4)

Abbreviations: HER2, human epidermal growth factor receptor; HR, hormone receptor.

*HR+ defined as either estrogen receptor or progesterone receptor positive.

electronic TPs coupled with targeted provider education was associated with improved performance on select ASCO QOPI measures. These metrics also align with OCM key performance indicators linked to performance-based payments.[8] Performance improvements were greatest for measures tied directly to ePROs or TP documentation, which likely reflect a combination of improved documentation, increased provider awareness of patient concerns, and algorithm-based TP recommendations acted on by the patient or clinical staff. In contrast, measures that required additional intervention from a clinician (eg, presence of an advance directive within the EMR or referrals for genetic testing) showed only modest improvements. These findings complement those of other studies on TPs in early-stage breast cancer, where 90% to 94% of patients who received TPs reported improved patient-physician communication.[9,10]

The three centers identified TP as a process rather than as a static document. On completion of this PDSA cycle, all have made substantial modifications to their TP process, including use of a dashboard to present key PRO and clinical recommendations and to integrate TPs into the clinical workflow to improve patient-centered care quality. Given the complexity and time-consuming effort of TP data abstraction, UAB partnered with its EMR vendor, Cerner (North Kansas City, MO) to interface with Carevive Systems to improve efficiency. In addition, UAB assigned lay navigators to initiate the ePROs, which provided a natural entry point for navigation. Lay navigators reviewed ePRO responses and referred patients to appropriate resources, including financial counseling, social work, psychology, and palliative care. MCI's and ACCI's workflow differed modestly, with nurse navigators (MCI) or research nurses (ACCI) initiating ePRO surveys; entering clinical data directly into the Carevive Systems platform; building TPs; and delivering TPs to provide in-depth, patient-specific education and to set expectations for self-management and care coordination with the patient. A scanned copy of the TP was placed in the EMR and provided to the patient. Electronic copies were provided on patient request. The paper and electronic TPs allowed patients to share their TP with other providers. All three centers believe that this systematic integration of TP into routine care maximized the benefit for OCM participants of TP delivery, and they currently are examining clinical (eg, reduced hospitalizations) and financial outcomes (ie, performance-based payments) using data from their first OCM performance period.

This quality improvement study had several limitations. The study did not meet desired accrual because ACCI transitioned from the research pilot to standard-of-care delivery of TPs after 12 patients as a result of a later date of project implementation. This highlights the challenge in pilot testing to meet an urgent clinical need secondary to a policy requirement. In contrast, UAB and MCI's pilot was conducted before OCM implementation, which was used to demonstrate feasibility and guide subsequent implementation when OCM began. In addition, the quality improvement driver is not known because no manner existed to discern differences on the basis of documentation versus change in practice. We also did not test the PROs alone versus within the TP, so these components cannot be evaluated separately. Detailed demographic information was collected only on the intervention patients in the Carevive Systems platform; control group patients had data on QOPI measures only. We did not collect data on the use of TPs at later encounters, so it is not possible to discern the long-term impact. However, OCM implementation is

TABLE 2. Performance on Quality Measures Across Cancer Centers by Intervention Versus Control

QOPI Item	Compliance, No. (%)	
	Intervention Group	Control Group
Pain assessed by second office visit*	74 (100)	73 (85)
Pain intensity quantified by second office visit*	74 (100)	69 (95)
Plan of care for moderate/severe pain documented by second office visit*	10 (77)	4 (36)
Pain addressed appropriately by second office visit and during most recent office visits*	71 (96)	62 (72)
Pain assessed on either of the two most recent office visits	74 (100)	86 (98)
Pain intensity quantified on either of the two most recent office visits	74 (100)	82 (98)
Plan of care for moderate/severe pain documented on either of the two most recent office visits	11 (79)	9 (47)
Pain addressed appropriately on either of the two most recent office visits*	71 (96)	72 (84)
Effectiveness of narcotic assessed on visit after prescription*	28 (100)	20 (80)
Constipation assessed at time of narcotic prescription or next visit	18 (62)	11 (44)
Chemotherapy intent (curative v non-curative) documented before or within 2 weeks after administration	74 (100)	85 (99)
Chemotherapy intent discussion with patient documented	68 (97)	84 (98)
Patient emotional well-being assessed by second office visit*	64 (84)	61 (71)
Action taken to address problems with emotional well-being*	25 (93)	4 (17)
Documentation of patient's advance directives by the third office visit*	12 (63)	9 (17)

NOTE. Data were not collected on all QOPI items for all patients. A total of 74 patients were in the intervention group, and a total of 86 patients were in the historical control group.

Abbreviation: QOPI, Quality Oncology Practice Initiative.

*Fisher's exact test $P < 0.05$ (two-tailed)

ongoing, and future evaluation is planned, including the impact of EMR integration that subsequently occurred at two of three sites to support scalability of efforts. Finally, this study evaluated short-term quality measures. More data are needed to understand the impact of ePRO-directed TPs on clinical and financial outcomes, especially given recent findings of improved quality of life and survival with routine PRO implementation.[11]

In conclusion, implementation of OCM TPs has provided an opportunity to improve performance on quality measures. Additional workflow optimization was needed to extend beyond the pilot phase and to scale to full OCM implementation, which has been previously described.[12] Ultimately, the incorporation of technology solutions to meet requirements for participation in payment reform initiatives may provide a platform to effect patient outcomes.

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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.18.00390.

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/jop/site/ifc/journal-policies.html.

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