



Anne Silber. *In France: Loire Valley*. Serigraph, © 1998.  
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*The Florida Initiative for Quality Cancer Care  
has allowed practices to compare their  
approach to managing colorectal cancer.*

## The Florida Initiative for Quality Cancer Care: A Regional Project to Measure and Improve Cancer Care

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**Background:** *The Florida Initiative for Quality Cancer Care (FIQCC) is a physician and practice-based quality improvement project that was conceived to study the barriers to delivering quality cancer care in Florida. The ultimate goal of the FIQCC is to improve cancer care throughout the state. This report provides an overview of the development and implementation of the FIQCC.*

**Methods:** *Representatives from 11 oncology practices across the state of Florida selected quality measures consistent with evidence-, consensus-, and safety-based guidelines that could be abstracted from medical records. Trained abstractors review records of all eligible patients seen by each practice and enter the data into a Web-based application. Frequencies of responses for each indicator are tabulated for overall and practice-specific level of adherence and compared among practices. Seminars are held to discuss strategies to address opportunities for improvement in the quality of cancer care identified by the survey.*

**Results:** *Three quality of cancer indicator modules organized by diagnosis (colorectal cancer, breast cancer, and non-small cell lung cancer) as well as a module relating to a domain of care (psychosocial care) have been developed by FIQCC participants. All of the participating practices successfully completed data collection for the colorectal cancer and breast cancer modules as well as the psychosocial care module. To date, 1,622 charts have been successfully entered into the FIQCC database. Results from the colorectal survey confirmed high overall rates of compliance with a series of quality indicators but also identified areas for improvement.*

**Conclusions:** *The FIQCC is working toward becoming a statewide program that enables practicing oncologists and investigators to measure and address disparities in the delivery of quality cancer care.*

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### Introduction

There is a growing consensus that improving cancer care will require health care professionals to measure and monitor indicators of the quality of cancer care with the goal of identifying and correcting care that falls below established standards. The landmark 1999 Institute of Medicine (IOM) report titled "Ensuring Quality Cancer Care" concluded that, for many Americans, there is a wide gap between what could be construed as the ideal and the reality of their experience with cancer care.<sup>1</sup> The reasons for poor quality are many, including overuse (eg, unnecessary tests, medications, and procedures, along with the associated risks and side effects), underuse (eg, not recommend-

ing lifesaving surgical procedures), and misuse (eg, medicines that should not be given together, poor surgical technique) of appropriate services by oncology care providers. To address these problems, the report recommended the use of systematically developed guidelines based on the best available evidence for prevention, diagnosis, treatment, and palliative care. In addition, the IOM recommended the measurement and monitoring of the quality of care using a core set of quality measures.

Stimulated by the board's report, a number of initiatives for quality of care have been implemented by several national organizations and institutions (Table 1).<sup>2-15</sup> An example of an early effort is the National Initiative for Cancer Care Quality (NICCQ) sponsored by the American Society of Clinical Oncology (ASCO),<sup>2</sup> the results of which were published in 2004.<sup>3</sup> This project developed 36 quality measures for breast cancer and 25 quality measures for colorectal cancer based on literature review and expert opinion. In the initial evaluation of these measures, data were collected from five metropolitan areas in the United States for patients newly diagnosed in 1998 with stage I to III breast cancer or stage II to III colorectal cancer. Findings indicated that, among colorectal cancer patients, adherence

rates ranged from 57% to 93% for individual indicators and were less than 85% for 14 of the 25 indicators. Although these findings identify important opportunities for improvement, they are based on geographically defined populations and thus it is difficult to determine the care prescribed by particular practitioners or health care delivery systems. Consequently, feedback to specific oncology care providers could not be accomplished by the NICCQ effort.

To provide direct feedback to oncology practitioners, the Quality Oncology Practice Initiative (QOPI) was initiated with support from ASCO to give oncology care providers a tool for self-examination that can be compared across practices and over time. In the initial phase of this project, which was published in 2005, 11 quality indicators were evaluated in seven oncology groups in two rounds conducted 6 months apart.<sup>4</sup> Quality indicators included issues related to patient safety (eg, use of chemotherapy flow sheets), application of evidence-based treatment (eg, use of serotonin antagonist with high emetogenic chemotherapy), and patient centric care (eg, consent for chemotherapy treatment). Findings indicated significant variation in adherence among the practices on eight of the 11 indicators. In 2006, the ASCO board of directors approved opening QOPI participation to ASCO members. The QOPI program has grown to more than 375 practices and now includes 57 measures.<sup>5</sup> Since QOPI was designed for physician and practice-level quality assessment, it has been successful in generating quality improvement efforts. The unique strengths of QOPI include rapid implementation, low cost, and strong physician engagement.

Although there are many advantages to a national system for measuring and monitoring the quality of cancer care, the IOM report points out that there is no national cancer care program or system of care in the United States. Like other chronic illnesses, efforts to diagnose and treat cancer are centered on individual physicians, health plans, and cancer care centers. The IOM report stated that "efforts to improve cancer care in many cases will therefore be local or regional and could feasibly originate in a physician's practice, a hospital, or a managed care plan." Taken together, the IOM observation of the role of regional cancer care systems, as well as the recommendations to use systematically developed guidelines, suggests the need for leading cancer centers to embark on a regional effort to improve the quality of cancer care. Since 1999, our institute, an NCI-designated comprehensive cancer center, has been developing collaborations with strategically located hospitals and practices throughout Florida, the state with the second-highest death rate from cancer in the United States. It is estimated that upwards of 20% of all cancer patients in Florida are currently treated within this network. Collaborative activities occur in the areas of cancer prevention and screening, continuing medical education, clinical service delivery, and clinical research. This infrastructure also provides a

**Table 1. — Initiatives for Quality of Care**

Year	Reference	Initiative
2004	Schneider et al <sup>2</sup>	National Initiative for Cancer Care Quality (NICCQ)
2005	Neuss et al <sup>4</sup>	Quality Oncology Practice Initiative (QOPI)
2005	Wilson and Owen <sup>7</sup>	American College of Radiology (ACR) Patterns of Care Study (PCS) now known as the Quality Research in Radiation Oncology
2006	Malin et al <sup>9</sup>	National Initiative for Cancer Care Quality (NICCQ)
2006	McNiff <sup>5</sup>	Quality Oncology Practice Initiative (QOPI)
2007	Jacobsen et al <sup>6</sup>	Moffitt Quality Practice Initiative (MQPI)
2007	O'Grady et al <sup>8</sup>	Fox Chase Cancer Center Partners (FCCCP)
2008	Jacobson et al <sup>9</sup>	Quality Oncology Practice Initiative (QOPI)
2008	McNiff et al <sup>10</sup>	Quality Oncology Practice Initiative (QOPI)
2008	Finlay et al <sup>11</sup>	Family Assessment of Treatment at End of Life (FATE)
2008	Desch et al <sup>12</sup>	American Society of Clinical Oncology (ASCO)/National Comprehensive Cancer Network (NCCN) Quality Measures project
2008	Bilimoria et al <sup>13</sup>	National Cancer Data Base (NCDB)
2008	Simunovic et al <sup>14</sup>	Quality Initiative in Rectal Cancer (QIRC)
2009	van Gijn et al <sup>15</sup>	European Society of Surgical Oncology (ESSO)
	Forthcoming	Florida Initiative for Quality Cancer Care (FIQCC)

unique opportunity for our center to study and achieve one of its prime objectives: the establishment of higher standards of cancer care statewide.

In 2003, in consultation with Joseph V. Simone, MD, one of the authors of the IOM report and the founder of the QOPI, investigators at our institute established the Moffitt Quality Practice Initiative (MQPI). This pilot project was built on efforts by both the NICCQ and the QOPI and utilized the following key recommendations from Dr Simone: (1) engage physicians in the process from day 1, (2) have a culture of self-examination and improvement, and (3) choose those who are willing to work with others to examine, question, and compare how they practice.<sup>6</sup>

The initial result of the MQPI was published in 2007.<sup>6</sup> This project developed the infrastructure and demonstrated the feasibility and utility of assessing quality indicators among members of the Moffitt affiliate network. Findings identified areas where adherence to care was uniformly high, but they also identified areas where both overall and practice-specific adherence were less than optimal.

These efforts laid the groundwork for expanding MQPI participation to other regional cancer care providers including practices that may not be affiliated with Moffitt Cancer Center. The expanded project was named the Florida Initiative for Quality Cancer Care (FIQCC). This is the beginning of a statewide program that we hope will grow to include many more practices throughout the state.

This review article describes the objectives, quality indicators, current participating practices, and methodology of the FIQCC and is not a report of the findings of the project. The use of the feedback obtained by practices to develop improvements in the quality of cancer care is discussed. In addition, some of the health services research hypotheses that have been generated from the initial data are highlighted. Finally, future plans to engage in in-depth studies of quality related issues using the FIQCC resource are presented.

## Methods

### Objectives

The objectives of the FIQCC project are: (1) to implement procedures for assessing quality of care in the treatment of cancer at our institute and selected medical oncology practices in the state of Florida via retrospective medical chart review, (2) to determine rates of adherence to each quality indicator for all participating sites combined and for each participating site separately, and (3) to provide feedback to each participating site about its performance on quality indicators that can be used to evaluate the need for quality improvement initiatives.

### Quality Indicators

The FIQCC builds on our initial effort by examining a broader array of quality indicators for colorectal cancer and introducing quality indicators for breast and non-small cell lung cancer (NSCLC). All original and

new indicators were derived from ASCO guidelines, National Comprehensive Cancer Network (NCCN) guidelines, the NICCQ, and the QOPI. All quality indicators were agreed upon by a panel consensus prior to data collection. This panel consisted of the principal investigator, coinvestigators, and collaborative site principal investigators.

Eight colorectal quality indicators were included in the MQPI; through the FIQCC this number grew to 50. The FIQCC also established 35 breast quality indicators by utilizing the American College of Surgeons measures in addition to the guidelines listed above. A limited number of quality indicators were in existence for NSCLC. Therefore, the FIQCC is the first large-scale quality of care study to pilot NSCLC indicators. NSCLC indicators were developed based on the American College of Chest Physicians guidelines and the Cancer Care Ontario guidelines (described elsewhere in this issue) in addition to the guidelines listed above.

### Participating Practices

The FIQCC also expanded the number of participating oncology practices from four to 11. Selection of practices for participation was guided by the following considerations: (1) the practice was composed of more than one medical oncologist, (2) the practice had the ability and agreed to provide an experienced medical record abstractor, and (3) the practice agreed to participate in the development of the quality standards, data collection form, and data collection process. Ten medical oncology practices across Florida that met the criteria were selected: the Center for Cancer Care & Research/Watson Clinic in Lakeland, Florida Cancer Specialists/Sarasota Memorial Hospital in Sarasota, Space Coast Medical Associates in Titusville, Ocala Oncology Center in Ocala, Tallahassee Memorial Healthcare/Hematology Oncology Associates in Tallahassee, University of Florida/Shands Cancer Center in Gainesville, Mayo Clinic in Jacksonville, Florida Institute of Research, Medicine & Surgery in Orlando, Robert & Carol Weissman Cancer Center at Martin Memorial in Stuart, and North Broward Medical Center in Deerfield Beach. Data were also collected at Moffitt Cancer Center, located at the University of South Florida in Tampa (Fig 1). The project received approval from Institutional Review Boards at each participating institution.

## Methodology of the FIQCC

### Case Selection and Sampling

At Moffitt Cancer Center, all analytic colorectal cancer, breast cancer, and NSCLC cases first seen by a medical oncologist in 2006 were selected by a query of the Moffitt Cancer Center Cancer Registry. Each participating practice also reviewed all office charts to identify eligible cases of colorectal cancer, breast cancer, and NSCLC first seen by a medical oncologist in 2006.

Since all sites indicated that their number of colorectal cases was lower than the number of either breast cancer or NSCLC cases, we proposed to abstract all pos-

sible eligible colorectal cases at each site and a subset of cases from the other two disease types. The number of abstracted breast cancer and NSCLC cases was determined by the number of abstracted colorectal cases at each site. Therefore, all sites have a consistent proportion of cases abstracted across the three groups. For the breast cancer and NSCLC cases, each site is provided a random list of numbers from one to the total number of cases for that specific group and site. The site then reviews the randomly ordered list until the total number equals the number of abstracted colorectal cases for that specific site.

### Training

A training manual for data identification, abstraction, and entry was developed and reviewed with all data abstractors to ensure consistency across practices. An experienced medical records abstractor from Moffitt Cancer Center was designated and trained as the chief abstractor for the project. This individual trains and monitors the other data abstractors.

The training and monitoring is composed of three phases. In the first phase, the chief abstractor abstracts five cases each of colorectal cancer, breast cancer, and NSCLC from 2005 (the year prior to the study year)

while the site abstractor observes. This enables the chief abstractor to demonstrate proper data collection pertinent to the survey, explain skip patterns, and answer any questions. In the second phase, each site abstractor reviews five additional cases each independently while the chief abstractor observes. The chief abstractor is available to assist when needed. In the third phase, the chief abstractor and site abstractor complete five of the same charts in order to determine site readiness. Each chart is reviewed, and when the chief abstractor and site abstractor are in agreement on an average of 70% or greater of their answers, the participating site is deemed ready. Discrepancies between the chief abstractor and the site abstractor were discussed and resolved, and relevant portions of the training and reference manual were reviewed when necessary. These three training and monitoring steps help to ensure the accuracy and reliability of data collection by demonstrating uniformity and consistency across all sites. If necessary, additional training is provided before practices are approved for project initiation.

After each site completes approximately one-third of their total cases, the chief abstractor reviews five randomly selected cases for quality assurance. The same review occurs after the site completes approximately

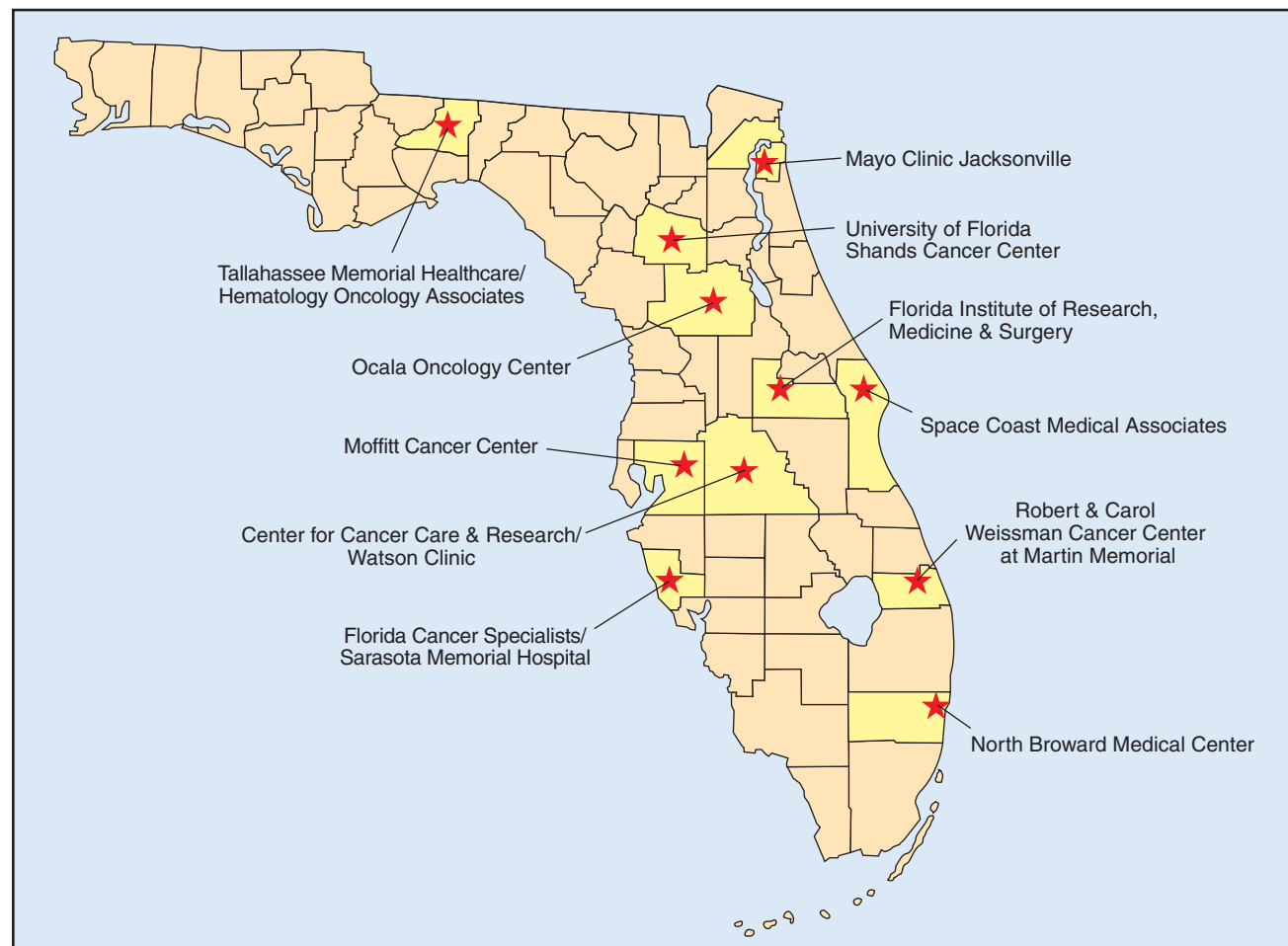


Fig 1. — Location of the 11 medical oncology practices across Florida that participate in the FIQCC project. The principal objective of the initiative is to improve cancer care throughout the state.

two-thirds of its total cases to ensure ongoing quality of data collection and entry.

### Data Collection

Data are entered record by record over a secured project-specific Web-based application for “real-time” electronic data capture. No direct patient identifiers are entered into the database. The abstractor from each respective site maintains a list of cases abstracted for the purpose of linking patient data to the patient medical record for query resolution. All submitted data are encrypted for added security. Records are maintained in a secure and confidential format in the centralized database. Only specific identified project staff involved in the primary collection and auditing of source documents have access to the data. All submitted data are subjected to automated quality checks including logic checks, counts of missing and unknown data, and programmed quality assurance queries. Reports describing the results of these assessments are sent back to the sites for review and correction as necessary.

### Data Reporting

After obtaining the results from each disease survey, Moffitt-based investigators prepare a report summarizing the results and comparing each site to each other and to the aggregate data. The rates for practices other than the practice that contributed the data are presented in masked form to preserve anonymity per agreement with the participating institutions. Participating sites are encouraged to share the results at their tumor board meetings and cancer committee meetings, thus generating discussion about possible areas for quality improvement. In addition, the investigators prepare a report for presentation and publication describing the development and implementation of this project and summarizing the performance of the participating sites

relative to the identified quality indicators. No specific site is identifiable from the information reported.

### Statistical Analysis

Since the planned analyses were exploratory, power calculations were not undertaken a priori. In the report, the proportion of “yes” responses for each of the eight quality indicators measured in both the MQPI and the FIQCC are compared. The differences in the proportion with their 95% asymptotic confidence intervals are calculated, using the normal approximation to the binomial distribution. The differences are tested using Fisher’s exact test. All analyses were performed with a  $P < .05$  significance level (two-tailed).

### Results

Fig 2 is a timeline of the FIQCC project. Table 2 presents examples of quality measures for colorectal cancer in the FIQCC within the framework of quality elements as described by the IOM. Quality indicators organized by diagnosis (colorectal cancer, breast cancer, and NSCLC) as well as a module relating to a domain of care (psychosocial care) have been developed for the FIQCC.

Table 3 presents the characteristics of the practices that participate in the FIQCC. The practices vary in type, location, and size. All of the practices have medical oncology patients and administer chemotherapy. Most of the practices have active clinical research programs. The variation in the number of new patients per medical oncologist in the practice is a function of many variables such as the percentage of effort devoted to clinical care compared to research and the maturity of the practice.

Table 4 presents a summary of concordance with FIQCC indicators that were identical to MQPI indicators for the practices that participated in both the

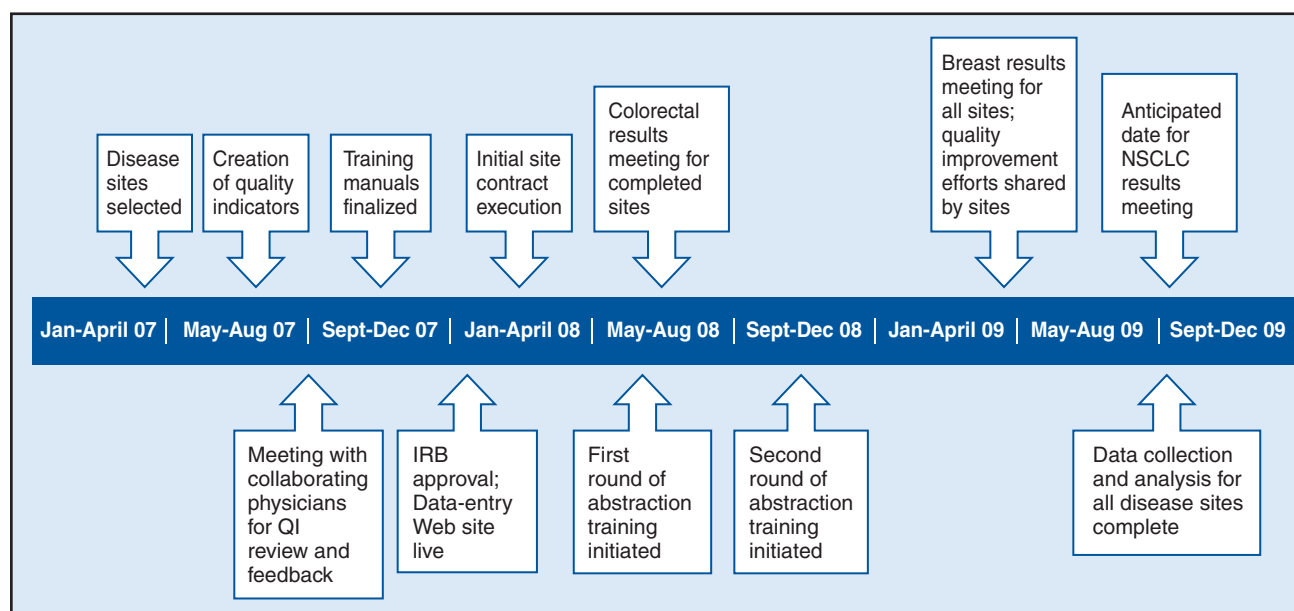


Fig 2. — Florida Initiative for Quality Cancer Care timeline.

**Table 2. — Florida Initiative for Quality Cancer Care Quality (FIQCC) Measures for Colorectal Cancer**

<b>Parameter</b>	<b>Indicator</b>	<b>Source</b>
Application of evidence-based surveillance: Colorectal cancer screening	Was “colorectal cancer detected by screening?”	Consistent with US Preventive Services Task Force recommendations
Patient safety: Diagnostic ascertainment	Was “there an explicit statement of the patient’s staging according to the AJCC or Duke’s systems?”	Panel consensus
Patient safety: Diagnostic ascertainment	For patients who do not have an explicit statement of staging in their chart, was “the tumor size, lymph node status, and metastatic status documented in the medical chart?”	Panel consensus
Patient safety: Diagnostic ascertainment	For patients who had surgical resection, was “a barium enema or colonoscopy performed within 6 months before or 6 months after surgery?”	NCCN guidelines and panel consensus
Application of evidence-based surveillance: Use of CEA test	Was “there a blood test for CEA at least once prior to surgery or chemotherapy treatment?”	ASCO guidelines, NCCN guidelines, and panel consensus
Application of evidence-based surveillance: Use of CEA test	For nonmetastatic patients, was “there a blood test for CEA at least once within 6 months after the last treatment, either surgery or chemotherapy?”	ASCO guidelines, NCCN guidelines, and panel consensus
Application of evidence and consensus-based treatment: Use of chemotherapy	For patients with stage II colon cancer features that increase the risk of recurrence (obstruction, perforation, T4 lesions, poorly differentiated adenocarcinoma or lymphovascular invasion), did “the physician discuss, recommend, or refer for adjuvant chemotherapy?”	NCCN guidelines, NCCQ, and panel consensus
Patient centric care: Explanation for not administering treatment	For patients with stage II colon cancer with increased risk of recurrence who were not referred for adjuvant chemotherapy, was “there an explicit note in the medical chart explaining why the physician did not discuss, recommend, or refer for adjuvant chemotherapy?”	Panel consensus
Application of evidence and consensus-based treatment: Use of chemotherapy	For patients with stage III colon cancer, did “the physician discuss, recommend, or refer for adjuvant chemotherapy within 4 months of diagnosis?”	NCCN guidelines, NCCQ, QOPI, ASCO guidelines, and panel consensus
Patient centric care: Explanation for not administering treatment	For patients with stage III colon cancer who were not referred for adjuvant chemotherapy, was “there an explicit note in the medical chart explaining why the physician did not discuss, recommend, or refer for adjuvant chemotherapy within 4 months of diagnosis?”	Panel consensus
Application of evidence and consensus-based treatment: Use of chemotherapy	For patients with stage II or III rectal cancer, did “the physician discuss, recommend, or refer for chemotherapy?”	NCCN guidelines, NCCQ, and panel consensus
Patient centric care: Explanation for not administering treatment	For patients with stage II or III rectal cancer who were not referred for chemotherapy, was “there an explicit note in the medical chart explaining why the physician did not discuss, recommend, or refer for chemotherapy?”	Panel consensus
Application of evidence and consensus-based treatment: Use of chemotherapy	For patients with metastatic colon or rectal disease, did “the physician discuss, recommend, or refer for chemotherapy?”	NCCN guidelines, NCCQ, and panel consensus
Patient centric care: Explanation for not administering treatment	For patients with metastatic colon or rectal disease who were not referred for chemotherapy, was “there an explicit note in the medical chart explaining why the physician did not discuss, recommend, or refer for chemotherapy?”	Panel consensus
Patient centric care: Consent for chemotherapy treatment	For patients who received chemotherapy, was “there a signed consent for treatment in the chart or a practitioner’s note that treatment was discussed and patient consented to treatment?”	QOPI and panel consensus
Patient safety: Use of flow sheets	For patients who received chemotherapy, was “there a flow sheet with chemotherapy notes and blood counts?”	QOPI and panel consensus
Patient safety: Planned dose of chemotherapy	For patients who received chemotherapy, was “the patient’s planned dose of chemotherapy documented in the medical oncology note?”	NCCQ and panel consensus

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**Table 2. — Florida Initiative for Quality Cancer Care Quality (FIQCC) Measures for Colorectal Cancer (continued)**

Parameter	Indicator	Source
Application of evidence and consensus-based treatment: Adherence to published chemotherapy regimens	For nonmetastatic patients who received chemotherapy and whose planned dose was documented, did “the patient’s planned dose of chemotherapy, dose per cycle and number of cycles, fall within a range that is consistent with published regimens?”	NCCN guidelines, NICCQ and panel consensus
Patient safety: Documentation of body-surface area	For patients who received chemotherapy, was “the patient’s body-surface area (BSA) documented?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, was “there a copy of the surgical pathology report confirming malignancy in the medical oncology office chart?”	QOPI and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report state the depth of invasion of the tumor?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report state the presence or absence of lymphovascular invasion?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report state the presence or absence of perineural invasion?”	Panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report state the differentiation of the tumor as well, moderate, or poor?”	Panel consensus
Patient safety: Assessment of tumor cells at resection margin	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report comment on the presence or absence of microscopic tumor cells at the resection margin?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease, did “the surgical pathology report indicate that the patient had the lymph nodes removed?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease who had their lymph nodes removed, did “the surgical pathology report state whether or not the tumor involves lymph nodes?”	NICCQ and panel consensus
Patient safety: Diagnostic ascertainment	For patients with nonmetastatic colon or rectal disease whose pathology report stated whether or not the tumor involves lymph nodes, did “the surgical pathology report state the number of lymph nodes involved?”	Panel consensus
Application of evidence and consensus-based treatment: Lymph node examination	For patients with nonmetastatic colon or rectal disease who had their lymph nodes removed, did “the surgical pathology report state whether or not the lymph nodes were examined?”	Panel consensus
Application of evidence and consensus-based treatment: Lymph node examination	For patients with nonmetastatic colon or rectal disease whose pathology report stated whether or not the lymph nodes were examined, did “the surgical pathology report state the number of lymph nodes examined?”	Panel consensus
Application of evidence and consensus-based treatment: Examination of 12 or more lymph nodes	For patients with nonmetastatic colon disease whose pathology report stated the number of lymph nodes examined, “how many lymph nodes were examined?”	NCCN guidelines, ASCO guidelines, QOPI, and panel consensus
Application of evidence-based surveillance: Radial margin free of tumor	For patients with nonmetastatic rectal disease, did “the surgical pathology report document that the radial margin of the surgical specimen is free of tumor?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Use of adjuvant chemotherapy	For patients with stage II colon cancer features that increase the risk of recurrence (obstruction, perforation, T4 lesions, poorly differentiated adenocarcinoma or lymphovascular invasion) who received chemotherapy, did “the patient receive adjuvant chemotherapy with a regimen listed below?”	NCCN guidelines, NICCQ and panel consensus
Application of evidence and consensus-based treatment: Use of adjuvant chemotherapy	For patients with stage III colon cancer who received chemotherapy, did “the patient receive adjuvant chemotherapy with a regimen listed below?”	NCCN guidelines, NICCQ and panel consensus

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**Table 2. — Florida Initiative for Quality Cancer Care Quality (FIQCC) Measures for Colorectal Cancer (continued)**

Parameter	Indicator	Source
Application of evidence and consensus-based treatment: Use of adjuvant chemotherapy	For patients with stage II or III rectal cancer who received chemotherapy, did “the patient receive adjuvant chemotherapy with a regimen listed below?”	NCCN guidelines, NICCQ and panel consensus
Patient centric care: Clinical trial participation	For patients with stage II colon cancer who received chemotherapy but did not receive adjuvant chemotherapy with a listed regimen, was “the patient in a clinical trial of a chemotherapy agent or regimen?”	NICCQ and panel consensus
Patient centric care: Clinical trial participation	For patients with stage III colon cancer who received chemotherapy but did not receive adjuvant chemotherapy with a listed regimen, was “the patient in a clinical trial of a chemotherapy agent or regimen?”	NICCQ and panel consensus
Patient centric care: Clinical trial participation	For patients with stage II or III rectal cancer who received chemotherapy but did not receive adjuvant chemotherapy with a listed regimen, was “the patient in a clinical trial of a chemotherapy agent or regimen?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Adjuvant chemotherapy initiation	For patients with stage II colon cancer features that increase the risk of recurrence (obstruction, perforation, T4 lesions, poorly differentiated adenocarcinoma or lymphovascular invasion) who received chemotherapy, did “the patient start adjuvant chemotherapy within 8 weeks after surgical resection?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Adjuvant chemotherapy initiation	For patients with stage III colon cancer who received chemotherapy, did “the patient start adjuvant chemotherapy within 8 weeks after surgical resection?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Adjuvant chemotherapy initiation	For patients with stage II or III rectal cancer who received chemotherapy, did “the patient start adjuvant chemotherapy within 8 weeks after surgical resection?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Use of radiation	For patients with stage II or III rectal cancer, did “the physician discuss, recommend, or refer for radiation?”	NICCQ and panel consensus
Patient centric care: Explanation for not administering treatment	For patients with stage II or III rectal cancer who were not referred for radiation, was “there an explicit note in the medical chart explaining why the physician did not discuss, recommend, or refer for radiation?”	Panel consensus
Application of evidence and consensus-based treatment: Radiation consult	For patients with stage II or III rectal cancer, did “the patient have a consultation with a radiation oncologist?”	Panel consensus
Application of evidence and consensus-based treatment: Use of radiation	For patients with stage II or III rectal cancer who received radiation, did “the patient receive a radiation regimen that included at least 45 Gray (Gy) over a period of 5 weeks?”	NCCN guidelines and panel consensus
Patient centric care: Clinical trial participation	For patients with stage II or III rectal cancer who received radiation but did not receive at least 45 Gray (Gy) over a period of 5 weeks, was “the patient in a clinical trial for radiation therapy?”	Panel consensus
Application of evidence and consensus-based treatment: Radiation therapy	For patients with stage II or III rectal cancer who received radiation, did “the patient receive radiation therapy before definitive surgical excision?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Radiation therapy	For patients with stage II or III rectal cancer who received radiation, did “the patient receive radiation therapy after definitive surgical excision?”	NICCQ and panel consensus
Application of evidence and consensus-based treatment: Use of neoadjuvant chemotherapy	For patients with stage II or III rectal cancer who received chemotherapy prior to surgical resection, did “the patient receive neoadjuvant chemotherapy with a regimen listed below?”	NCCN guidelines, NICCQ and panel consensus
Application of evidence and consensus-based treatment: Chemotherapy initiation	For patients with stage II or III rectal cancer who received neoadjuvant chemotherapy, did “the patient start neoadjuvant chemotherapy within 8 weeks after first positive biopsy?”	NICCQ and panel consensus

AJCC = American Joint Committee on Cancer, NCCN = National Comprehensive Cancer Network, CEA = carcinoembryonic antigen, ASCO = American Society of Clinical Oncology, NICCQ = National Initiative for Cancer Care Quality, QOPI = Quality Oncology Practice Initiative.

**Table 3. — Characteristics of Florida Initiative for Quality Cancer Care (FIQCC) Practices**

Practice Type	No. of Oncologists	No. of Offices	No. of New Patients Annually
Community	9	2	1,650
Community	9	2	4,000
Academic	125	1	15,400
Community	8	4	3,000
Community	5	2	2,040
Community	8	3	1,200
Academic	20	1	2,900
Community	7	4	7,000
Community	5	1	350
Community	5	1	900
Academic	29	1	1,690

FIQCC and the MQPI. There were significant changes in performance on five of the eight quality measures between the MQPI survey, which was carried out for patients first seen for treatment in 2004, and the FIQCC survey, which was done for patients first seen in 2006. These measures were the presence of a pathology report in the medical record confirming malignancy ( $P = .014$ ), the measurement of carcinoembryonic antigen (CEA) before surgery or chemotherapy ( $P < .001$ ), colon evaluation within the past 12 months ( $P < .001$ ), documentation of chemotherapy consent ( $P = .001$ ), and the presence of chemotherapy flow sheet ( $P = .013$ ). The measures of pathology report in the chart, CEA measurement before surgery or chemotherapy, and colon evaluation within the past 12 months showed statistically significant increasing adherence, while chemotherapy consent documentation and the presence of a chemotherapy flow sheet showed decreasing adherence.

No significant differences were seen in documentation of Dukes or American Joint Committee on Cancer (AJCC) staging, CEA evaluation in 6 months after surgery or chemotherapy, and the discussion or recommendation of chemotherapy.

To date, 11 practices have participated successfully in the colorectal and breast cancer disease modules, as well as the psychosocial domain of care module, with 1,622 charts entered into the FIQCC database. The data available from a recent survey in colorectal cancer as well as surveys for NSCLC, breast cancer, and psychosocial care will be reported elsewhere once data collection has been completed across all three diseases.

## Discussion

Health care providers are under considerable pressure to deliver care that can be measured, monitored and, when necessary, improved. The FIQCC provides a framework for a regional network of oncology health care providers to conduct quality self-assessment that could lead to improvement in the care of patients. Our initial experience supports the widely held hypothesis that continuous quality of care assessment and feedback to providers can improve quality. Resurvey of the original four participating institutions from the MQPI in the current FIQCC survey indicated that the quality indicators of pathology report in the chart, CEA measurement before surgery or chemotherapy, and colon evaluation within 12 months showed statistically significant improvement since the initial survey. On the other hand, the need for continued monitoring of quality indicators is underscored by the observation that some of the indicators in the original MQPI survey such as chemotherapy consent documentation and the presence of chemotherapy flow sheet showed worse adherence in the FIQCC resurvey.

The FIQCC demonstrates that a regional process can be developed for oncology care providers to perform ongoing self-assessment that can be compared not only to best practices in the region but also to prior observation. The advantage of the regional scale of the project is that providers are engaged and have direct input in the development of FIQCC measures. The FIQCC group is able to add or subtract measures rapidly as interventions evolve, new guidelines emerge, or new measures from national quality care projects are described. The flexibility and broad nature of the FIQCC

**Table 4. — Comparison of Results for Florida Initiative for Quality Cancer Care (FIQCC) and Moffitt Quality Practice Initiative (MQPI) Colorectal Indicators**

Variable	MQPI (2004) No. Yes/Total (%)	FIQCC <sup>1</sup> (2006) No. Yes/Total (%)	Difference (95% CI)	Fisher's P Value
Pathology report confirming malignancy	243/260 (93.5%)	160/162 (98.8%)	5.3 (2, 9)	<b>.0136</b>
Dukes or AJCC staging	234/260 (90.0%)	249/265 (94.0%)	4.0 (-1, 9)	.1084
CEA before surgery or chemotherapy	149/260 (57.3%)	129/162 (79.6%)	22.3 (14, 31)	<b>&lt; .0001</b>
CEA in 6 months after surgery or chemotherapy	215/260 (82.7%)	130/162 (80.2%)	-2.4 (-10, 5)	.5206
Colon evaluation within 12 months	71/156 (45.5%)	191/214 (89.3%)	43.7 (35, 53)	<b>&lt; .0001</b>
Chemotherapy discussed or recommended*	190/197 (96.4%)	190/191 (99.5%)	3.0 (0, 6)	.0678
Chemotherapy consent documented**	121/143 (84.6%)	109/166 (65.7%)	-19.0 (-28, -10)	<b>.0001</b>
Chemotherapy flow sheet**	140/143 (97.9%)	151/166 (91.0%)	-6.9 (-12, -2)	<b>.0129</b>

For FIQCC, only the four sites that also participated in MQPI are included in this analysis. Statistically significant variables are bolded ( $P < .05$ ).  
<sup>\*</sup> Includes only patients for whom guidelines recommend use of chemotherapy.  
<sup>\*\*</sup> Includes only patients who received chemotherapy.

measures will allow participants to compare their results with those of national projects, providing yet another reference standard that can itself be improved.

The initial feedback from participants indicates that the FIQCC project is a practical process that can be used to help improve practice quality. In the FIQCC regional meeting held on March 27, 2009, participants exchanged information about quality improvement efforts from the feedback obtained from the FIQCC project. Examples of these efforts include the implementation of processes such as a formal standardized consenting document for patients undergoing chemotherapy and the use of electronic medical record to give immediate feedback about quality standards to health care providers. One of the issues that is being addressed with the feedback from the project is the concept that cancer patient outcomes are influenced by factors beyond the behavior of a provider from a single specialty. For example, the issue of adequate sampling of lymph nodes is a problem for the surgeons and pathologists to address rather than the medical oncologists. Therefore, sharing the feedback from the FIQCC project with the team of medical providers is an important strategy to influencing the role of all providers in the quality care of patients. Future directions of the FIQCC are to develop measures for all the providers involved in cancer care and to include the most important measures of true cancer care effectiveness: survival and minimization of suffering.

One of the most important challenges to the FIQCC approach to regional improvement in the quality of cancer care is the funding for the project. The initial MQPI project, which developed the infrastructure (such as the Web portal) for the FIQCC, was an initial investment of Moffitt Cancer Center. Each practice in the initial project provided the services of office staff who reviewed medical records and entered abstracted data into a computerized database. The estimated cost to the practices was \$1,500 per 100 cases reviewed. The current FIQCC project is funded through a grant from Pfizer, Inc. This grant supports the administrative costs as well as provides practices with a stipend to defray the cost of abstracting the charts. The long-term support of this project will depend on continued support from grants. To this end, investigators have been studying the data to develop fundable research questions. To date, three abstracts have been generated from the initial analysis of the quality indicators for colorectal cancer. One abstract described the adherence to National Quality Forum colorectal cancer indicators among members of the FIQCC consortium. Another abstract studied the impact of patient age on quality of care in the treatment of colorectal cancer. The third abstract reported the initial evaluation of APOS indicators of the quality of psychosocial care. These abstracts are initial studies that will lead to hypothesis-driven research using the infrastructure of the FIQCC. The QOPI has demonstrated that many practices are willing to bear the cost of similar projects to measure quality of cancer

care. Other potential means to minimize the cost to practices include the incorporation of quality measures in electronic medical records, and encouragement from payers who reward practices that successfully participate in quality of care projects.

## Conclusions

The FIQCC is a voluntary practice-based quality measurement and improvement project that is available to oncology care providers in Florida. The FIQCC assesses practice performance for a series of measures that is updated to reflect current evidence- and consensus-based standards. Interventions that address areas of suboptimal performance will ultimately improve outcomes for patients with cancer.

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