ASSOCIATION OF COMMUNITY CANCER CENTERS

MULTIDISCIPLINARY MULTIPLE MYELOMA CARE: MODELS OF QUALITY IMPROVEMENT

ACCC
Association of Community Cancer Centers

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Quality improvement (QI) is increasingly important as healthcare organizations pursue greater efficiency and value in the services they provide. The Institute for Healthcare Improvement views QI as a rapid-cycle test of a new process that is designed to improve quality, safety, and value in healthcare. Using Plan-Do-Study-Act methodology, the rapid-cycle approach identifies a need for improvement, determines the necessary steps to implement change, establishes metrics to measure progress, and immediately implements small tests of the changes needed for improvement (see Figure 1, page 4).

The Association of Community Cancer Centers (ACCC) has supported QI initiatives for many years through its Visiting Experts Program. In 2020 ACCC offered QI programs designed to optimize care for patients with multiple myeloma (MM). Via custom workshops, multidisciplinary team members from three cancer programs appraised their own challenges and opportunities to improve care and developed QI plans that were specific, measurable, and actionable over a six-month time frame. The QI time frame included workshop participation, baseline data reporting, progress calls with ACCC, and outcomes evaluation.

Multiple Myeloma

MM is the second most common hematologic cancer in adults and is characterized by the multiplication of monoclonal plasma cells in bone marrow.[1,2] Osteolytic bone disease is a dominant feature of MM that often results in skeletal-related events, such as osteopenia or pathologic fracture; contributes to considerable morbidity; and can reduce quality of life. There is no cure for MM and most patients relapse following initial therapy, although treatment options for newly diagnosed and relapsed or refractory MM have expanded rapidly in the last two decades. In addition to autologous hematopoietic cell transplantation and radiation, immune-modulating drugs, proteasome inhibitors, and monoclonal antibodies (e.g., daratumumab, elotuzumab) have been introduced that invoke deeper responses and have improved survival. However, disease management can be complex, especially because 35 to 40 percent of patients are older than 75 years.[3] Immunotherapies for MM continue to evolve. Checkpoint inhibitors, chimeric antigen receptor T-cell therapies that target B-cell maturation antigens, bispecific antibodies (e.g., blinatumomab), and antibody drug conjugates are all currently under investigation for patients with relapsed and refractory MM.[4]

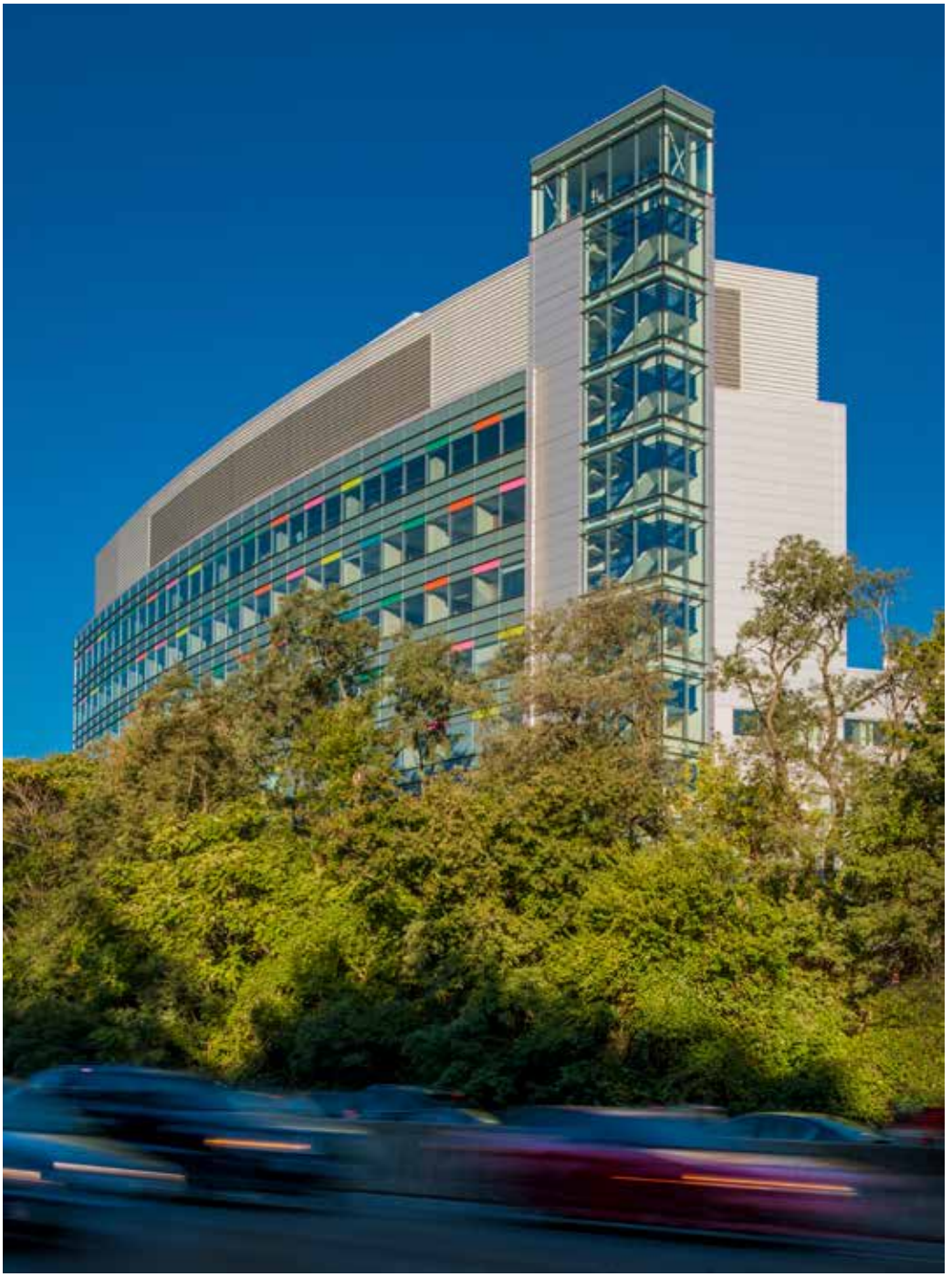
MM Visiting Experts Program

ACCC conducted three visiting experts workshops focused on care for patients with multiple myeloma. The four six-hour workshops were held live at Holy Cross Hospital in Silver Spring, Md., and CalvertHealth Medical Center in Prince Frederick, Md., and online at Central Care Cancer Center in Bolivar, Mo. Each cancer program received content presentations from visiting expert faculty and participated in extensive, facilitated discussions to develop a QI intervention. In the ACCC process, these discussions allow team members to review and prioritize potential challenges they can reasonably address within a six-month period and evaluate the likely impact and feasibility of each challenge. When attendees have established consensus about which challenge to tackle, they identify a clear aim, document steps to achieve the aim within the timeline, and describe measures for tracking progress. Table 1, page 5, provides an overview of the MM Visiting Experts Program.

The Holy Cross Health Experience

Holy Cross Health, a member of Trinity Health and located in Maryland, has multiple primary care sites and two hospitals in Montgomery County. Serving the nearly two million residents of Montgomery and Prince George's counties, this Catholic, not-for-profit health system is dedicated to caring for a diverse population with special consideration for the most vulnerable and underserved. Holy Cross Health's cancer program, located within a 449-bed hospital in Silver Spring, Md., is an American College of Surgeons Commission on Cancer accredited Comprehensive Community Cancer Program. The annual volume of myeloma patients is relatively low (approximately 14) because affiliated community physicians diagnose and treat most myeloma patients outside of the hospital setting. Transplant candidates and relapsed patients are referred to tertiary academic centers for care.

In February 2020, 19 participants from pharmacy, nursing, medical oncology, research, social work, and administration



Holy Cross Hospital

Figure 1. Institute for Healthcare Improvement: Six Steps in Rapid Cycle Improvement

attended the Visiting Experts Workshop at Holy Cross Hospital. The team quickly reached consensus on their QI priority. Many of the patients whom Holy Cross Hospital serves are undocumented immigrants who are often under- or uninsured. As a result, these patients have limited access to a full spectrum of myeloma therapies. Oncologists also reported difficulty in identifying referral centers willing to accept under- or uninsured patients when transplant is indicated. Currently, social workers help this high-need population apply for prescription assistance programs or enroll them in state insurance programs if they are eligible. When patients find insurance coverage, they typically return to community providers for their care, occasionally without the hospital's knowledge, which results in patient no-shows at the hospital. Despite effective communication between pharmacists and oncologists about treatment for patients with MM, the QI team agreed that lack of navigation capacity in community clinics caused delays in the diagnosis, treatment initiation, and referral to tertiary care.

Building Navigation Capacity

The goal of the QI intervention was to utilize hospital social work or nurse navigation to coordinate care for 75 percent of under- and uninsured patients with MM referred by community partners. To this end, the QI team proposed to review charity care data for MM ICD (*International Classification of Diseases*) codes to determine the caseload requiring navigation and develop a protocol for navigation referrals. By the one-month check-in with ACCC, it was clear that charity data were less accessible than anticipated, so the QI team regrouped to define the target population more clearly as (1) uninsured patients and (2) underinsured patients or patients with a high co-pay or deductible who cannot afford treatment. Using this definition, baseline review of electronic health record (EHR) data showed that 10 patients with MM were seen at Holy Cross Hospital between January and September 2019 and 5 were within the QI target population. The team resolved to reduce the average time from chemotherapy order to first infusion from seven to four days.

Between months one and three, the QI team also met frequently with the financial navigation team to understand the insurance verification process and formalize a protocol to ensure earlier treatment initiation. This collaboration with the financial navigator and inpatient case manager/social worker led to a new internal communication process to initiate financial assistance paperwork more quickly for this target population and a process to track and monitor patients with MM treated at the infusion center. The QI team also operationalized its navigation intervention by outlining the roles and duties of key staff and hospital units (see Figure 2, page 6).

Process, Process, Process

Holy Cross Hospital and affiliated community oncology providers experienced a significant decrease in patient volume because of the COVID-19 pandemic. Thus, the QI team was unable to test its new workflow or collect outcomes data. Nonetheless, team members saw communication and operational improvements, in part because they implemented the initiative with existing resources and focused their efforts on learning from colleagues in other departments. The outpatient infusion center health unit coordinator noted, "In the past, maybe we wouldn't have reached out to certain departments and said, 'Well, how are you handling this? How does this work?' So it gave us an opportunity to talk with each other and come up with solutions for how to navigate the system or help the patient navigate the system."

As a result, communication with the insurance verifier is now more effective for uninsured patients with other types of cancer, leading to improved care coordination and timeliness of care. Prior to the QI project, it was not routine practice for case managers to alert the outpatient infusion center about under- or uninsured patients pending discharge. The new protocol gave the QI team the opportunity to enhance its existing verification

Table 1. Overview of the Multiple Myeloma Visiting Experts Program
Program Goals
Educate attendees on effective practices for supporting, treating, and managing patients with multiple myeloma.
Facilitate development of a tailored QI intervention focused on optimizing care for patients with multiple myeloma.
Follow cancer program implementation progress for six months.
Visiting Expert Faculty
Maria Chaudhry, MD, assistant professor of medicine, Division of Hematology, The Ohio State University—James Cancer Hospital and Solove Research Institute
David H. Vesole, MD, PhD, FACP, co-division chief, director of research, Multiple Myeloma Division, John Theurer Cancer Center, Hackensack University Medical Center; director, Myeloma Program, professor of medicine, Georgetown University
Srinivas Devarakonda, MD, assistant professor of internal medicine, Division of Hematology, The Ohio State University—James Cancer Hospital and Solove Research Institute
Ashley Rosko, MD, associate professor, Division of Hematology, The Ohio State University—James Cancer Hospital and Solove Research Institute
Jennifer Bires, LICSW, OSW-C, executive director, Life with Cancer and Patient Experience, Inova Schar Cancer Institute
Adriana Rossi, MD, associate director, Myeloma Center and assistant professor of medicine, Division of Hematology and Medical Oncology, Weill Cornell Medicine
Content Presentations
An Overview of Multiple Myeloma
What is New in Relapsed and Refractory Myeloma?
Multiple Myeloma in Aging Adults
Psychosocial Impact of Multiple Myeloma
Renal Disease in Multiple Myeloma
Quality Improvement Process
Development of QI Intervention in Multiple Myeloma Visiting Experts Workshop
QI Intervention Launch and Identification of Baseline Data
Progress Check-In Calls with ACCC at 1, 3, and 6 Months
Team Evaluation Interviews and Final Data Collection
Completion of Final Project Summary Report

Figure 2. Roles and Responsibilities of Holy Cross Health Staff and Units

Physicians	• Physicians learn of services available and become aware of referral process. • Physician's office is re-educated on calling outpatient infusion center to make appointment.
Insurance Verification Department	• Insurance verification department calls patient regarding co-pay or security deposit; if patient is not able to afford payment due, patient is given the option to apply for financial assistance or meet with patient advocate (Holy Cross Health term for financial navigator). • Patient advocate meets with patient to assess for financial assistance/charity.
Inpatient Unit	• Case management on the unit learn of process change. • As soon as the decision to discharge a patient has been made, inpatient case manager alerts outpatient infusion center and connects patient with the financial assistance department to start clearance process for outpatient service.
Outpatient Infusion Center	• Insurance verification representative communicates patient insurance status to the outpatient infusion center coordinator. • When patient is uninsured, insurance verification department provides phone number to financial assistance department. • Outpatient infusion center coordinator notifies oncology social worker with the oncology patients who still need to be cleared by the financial assistance department.
Oncology Social Worker	• Oncology social worker uses HealthQuest for financial assistance process. • Oncology social worker reminds patient to contact the financial assistance department if documents are still pending before visit.

process. The process entails outpatient infusion center staff contacting the insurance verifier, printing patient eligibility paperwork, and faxing information to the insurance verifier for entry in the patient records. The outpatient infusion center coordinator reviews the registration list in advance of treatment initiation to identify any patients with outstanding financial clearance issues. If a patient has not been approved for charity care, central scheduling alerts the outpatient infusion center and proactively routes them to the oncology social worker. Through HealthQuest, the oncology social worker identifies missing documents and reminds the outpatient infusion center staff to prompt the patient to complete paperwork.

The QI team has shared information about the process enhancements at the weekly tumor board. A kickoff meeting was held with the community medical oncologists to make them aware that under- and uninsured patients can begin treatment more quickly at Holy Cross Hospital through this new protocol. The QI team plans additional outreach efforts to enable referring physicians to identify eligible patients who could benefit from financial assistance and educate the Holy Cross Hospital oncology team about the new process. The teams also plan to document the new inpatient to outpatient transition process to ensure that eligible patients can be referred more quickly when volume returns to pre-pandemic levels.

The CalvertHealth Medical Center Experience

CalvertHealth Medical Center in Prince Frederick, Md., is a not-for-profit health system with a mission to promote wellness and provide health care to approximately 125,000 residents of southern Maryland. CalvertHealth is the only medical facility in Calvert County and offers an array of services across the health continuum for this predominantly rural community. The cancer program at CalvertHealth is accredited by the Commission on Cancer as a community cancer program and in the last 12 months has treated 58 patients with MM, including patients for whom care is shared at tertiary academic care centers.

Developing a Protocol to Review and Assess the Use of Bone-Modifying Agents

Twenty-eight participants from pharmacy, nursing, medical oncology, palliative care, radiation oncology, navigation, social work, quality improvement, and administration attended the February 2020 Visiting Experts Workshop at CalvertHealth. Delays in bone marrow biopsy scheduling emerged in discussion as the highest priority challenge for QI, but participants recognized that this challenge would be complex to address within the time frame. The absence of a systematic process for documenting the administration of bone-modifying agents and monitoring toxicity emerged as an additional area in need of improvement. Osteoclast inhibitors (i.e., bisphosphonates such as zoledronic acid, denosumab) inhibit bone resorption and are used in the management of MM to reduce the risk for skeletal-related events. Recent updates to National Comprehensive Cancer Network guidelines recommend that patients have a dental examination and preventive dentistry before treatment is initiated with bone modifying agents to reduce the potential for oral infection and osteonecrosis of the jaw.[5] However, many patients in the community that CalvertHealth serves lack access to dental care due to low levels of dental insurance and a shortage of dental providers. These factors pose significant barriers to the baseline dental clearance that National Comprehensive Cancer Network guidelines recommend prior to treatment initiation in myeloma. Therefore, the QI team focused the intervention on improving the following areas of myeloma management:

- Review and assessment of bone-modifying agents used to reduce the risk for skeletal-related events.
- Screening for individuals at risk for bone-modifying agent-related complications.
- Strategies to monitor and minimize dental complications.

The QI goals were to proactively assess the use of bone-modifying agents in 75 percent of patients with MM and to conduct dental assessment during clinic for 25 percent of patients.

The team developed the following components of the intervention that were internally approved for use:

- Dental consult form to be completed by the dentist at the baseline examination.
- Dental screening form to be completed by a nurse or medical assistant in the physician's office.
- Standing orders for initiating denosumab and zoledronic acid.
- Dental folder to upload all forms for each patient with MM in the EHR.

Dental consult forms were provided to patients for completion by a dentist. A nurse or medical assistant in the physician's office used dental screening forms during patient visits. Infusion and office nurses were subsequently educated about both the importance of dental screening and the workflow process for completing and uploading forms. Infusion nurses were to alert the physician's office if patient dental forms were not on file.

Improving Bone Modifying Agent and Dental Screening Outcomes

At baseline, consecutive chart review from the two EHR systems (NextGen and Meditech) between January and December 2019 identified 58 patients with a diagnosis of MM (patients who had not achieved remission or who were in remission or relapse). Nine patients were excluded because they did not receive care at CalvertHealth. None of the remaining 49 patients had completed a dental screening form prior to treatment, and of the patients who received bone modifying agents (n = 25), only 20 percent had evidence of a dental consult documented within their medical records. None of the patients had a dental folder present in their record. The clinical team began using the approved protocol on June 1, 2020, and the standing orders in August 2020.

A review of patient data after implementation of the approved protocol and standing orders identified advances to improve the bone modifying agent and dental screening outcomes for 37 patients with MM (Figure 3, page 9). Fifty-one percent of the 37 patients (n = 19) received a bone-modifying agent as part of their therapeutic regimen. Patients did not receive a bone-modifying agent likely because of observation status, co-morbid medical conditions that preclude use (e.g., renal insufficiency, dental abnormalities, electrolyte abnormalities), patient preference, or provider oversight. At this time, the medical records do not have clear explanations documented.

Fifty-eight percent of patients (n = 11) underwent dental screening, and one patient underwent a comprehensive dental consultation. Patients did not undergo a dental screening and/or comprehensive dental consultation likely because of team oversight, competing responsibilities, unavailability of forms, lack of staff training, or poor documentation in the medical record. In terms of documentation, 58 percent (n = 11) of the 19 patients who received a bone-modifying agent had a dental screening form included within their EHR. Fifty-nine percent of all 37 patients (n = 22) had a dental folder within their medical records.

CalvertHealth Medical Center

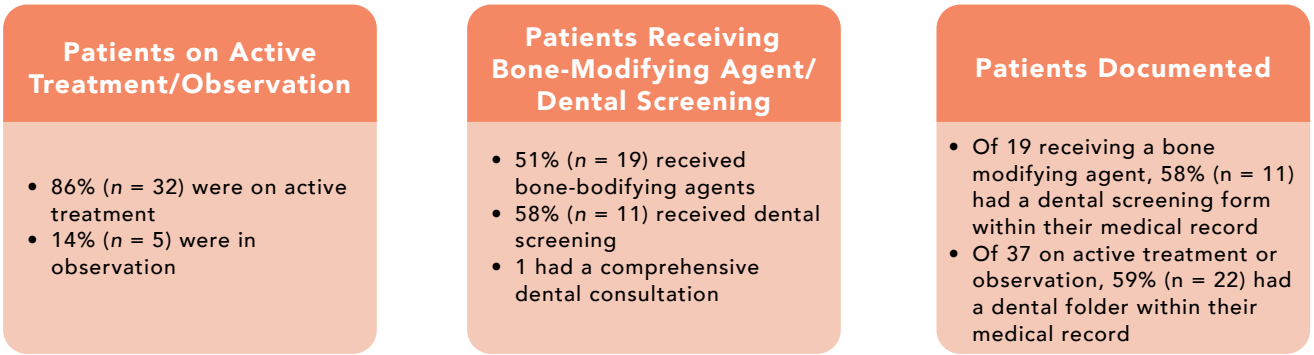
Going forward, CalvertHealth will continue its efforts to adhere to the most current national guidelines for evaluation and treatment of patients with multiple myeloma. The medical team will use multidisciplinary tumor boards to review and implement these guidelines for treatment and toxicity monitoring. CalvertHealth's six-month goal is to achieve 100 percent adherence to guidelines for administration of bone-modifying agents and to have clear documentation to explain lack of administration. Its second six-month goal is for 100 percent of patients to receive a bone-modifying agent, screening with a dental questionnaire, and laboratory testing to assess for toxicity risk.

Unanticipated Payoffs

The CalvertHealth QI team was able to make tremendous strides toward achieving its goals. Christine Shipley, clinical director of Oncology Services, pointed to several factors that contributed to success. First, Shipley and the QI team had protected time to work on the intervention, which gave the team space to carefully compile data points, establish data collection methods, and define the workflow. Second, education for infusion nurses was instrumental in raising awareness about screening and the need for dental standing orders. Shipley noted that a payoff for this education was "… better communication amongst the team. We're physically separated, so it kind of pulls us closer together and brings that continuum of care and that consistency—regardless of whether you're in the doctor's office or the infusion center."

There were other unanticipated payoffs, too. Although Shipley and her colleagues assumed that they would be starting at a zero baseline for dental screening, they were pleasantly surprised to find that a small percentage of patients with MM had been screened prior to the intervention. Additionally, QI team members appreciated how the intervention increased their awareness of patients' concerns about dental issues and how patients have become more receptive to being screened. Medical assistant Teresa

Figure 3. Patients with Multiple Myeloma Seen at CalvertHealth June to August 2020.



Sculley said, "It's just amazing how many people are afraid to talk about their dental issues, thinking it's going to hurt them or something. Our patients were a little skeptical at first, but when you explain to them why, they're all for it. Now they just come in, and I go over the same questions. 'Do you have any bleeding gums, any loose teeth, anything bothering you recently, any sores in your mouth that we need to be concerned about?' They don't mind answering those questions now. I think they know that we're looking out for them in any way we can to help them with what they're going through."

The Central Care Cancer Center Experience

Central Care Cancer Center, Salina, Kan., operates 11 comprehensive cancer treatment centers across Kansas and Missouri and is certified through the Association of Clinical Oncology Quality Oncology Practice Initiative. Most patients are currently seen at locations in Bolivar, Mo., and western Kansas, although the cancer center is currently preparing to open a new clinical site in Kansas City. The Bolivar site has one full-time hematologist/oncologist who sees mostly Caucasian patients insured through Medicare (70 percent). Approximately 10 to 15 percent are enrolled in Medicaid and 15 to 20 percent are privately insured. Although most clinical trials are run at larger academic medical centers, patients seen at Central Care Cancer Center, including approximately 70 per year with MM, have access to some clinical trials through community partnerships.

Improving Patient Adherence to Oral Chemotherapy Regimens

In May 2020, 14 participants from pharmacy, nursing, medical oncology, radiation oncology, clinical research, financial counseling, and administration attended the QI workshop at the Bolivar, Mo., site. The team identified low adherence to oral chemotherapy medications as the top challenge associated with managing patients with multiple myeloma. Oral chemotherapy regimens in MM can be confusing for older patients to follow and their complexity potentially limits shared decision-making, medication adherence, and adequate management of treatment side effects. The agreed-on QI aim was to improve oral chemotherapy adherence, tolerability, and outcomes for new patients with MM 65 years or older by streamlining initial medication review, patient education, and geriatric assessment. To this end, the QI team developed an EHR template for the pharmacist to document the results of medication review for providers. The team mapped out the medication and supplement review process to ensure that all team members understood their roles and the steps in the process (Figure 4, page 11).

At the three-month check-in, the QI team also distilled the three metrics to use to evaluate improvement in adherence and changes due to the QI intervention:

1. Delays between planned treatment cycles.
2. Reduction in total chemotherapy doses.
3. Discontinuation of initial treatment regimen.

Lastly, the QI team finalized a three-part geriatric assessment protocol based on sample assessments that one of the visiting experts provided. This protocol included a brief questionnaire, a hand grip strength test, and an ambulation assessment. The QI team codified the geriatric assessment workflow to clarify how to conduct the assessment, which staff would conduct and document the assessment, and how the assessment would be used to tailor treatment (Figure 5, page 11).

Central Care Cancer Center

Improving Patient Assessment, Managing Process Challenges

This low-cost intervention improved patient assessment. The Bolivar site saw 76 patients with MM between January and July 2020. By the six-month check-in, clinicians had completed eight geriatric assessments and 29 medication reviews. Treatment changed from baseline for 10 patients, although—because of process challenges and barriers to patient-pharmacist interaction—the medication reviews and geriatric assessments did not actually inform these decisions. For instance, the pharmacist explained that patients had little opportunity to build a relationship with him because he worked mainly onsite at the Kansas City location. As a result, patients did not always recognize his area code when he called and even when he was able to connect with them by telephone to offer the medication review, nearly all patients initially declined the service.

To address this communication challenge, the Bolivar site nurses used the COVID-19 screening calls prior to appointments to ask patients to bring a medication list or a bag with all their medication bottles to review at their next visit. The pharmacist was subsequently able to flag potential medication adherence

Figure 4. Central Care Cancer Center's Medication and Supplement Review Process

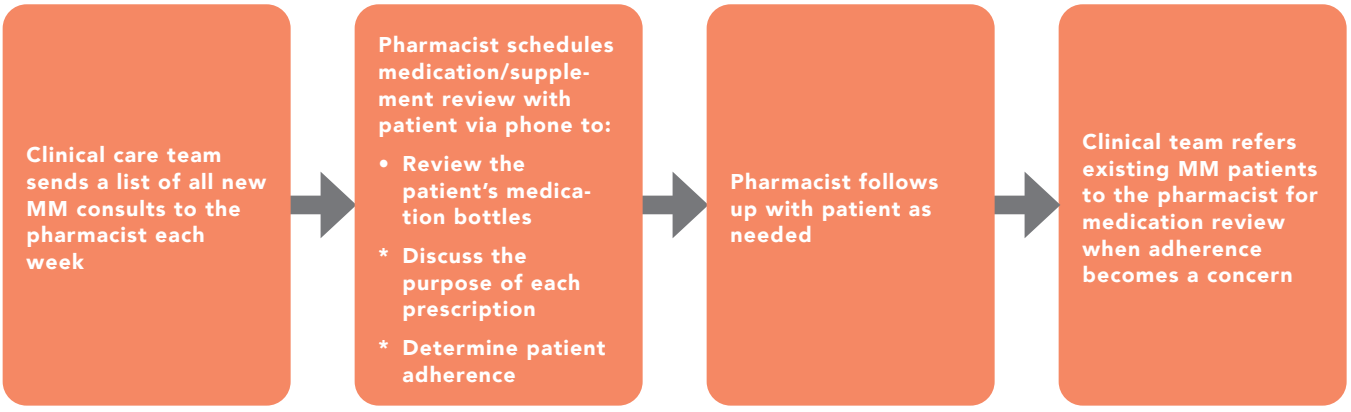


Figure 5. Central Care Cancer Center's Geriatric Assessment Workflow

issues to the oncologist. However, information gleaned through this process was insufficient for treatment decision-making. Other challenges concerned the reluctance of some patients to come into the clinic during the pandemic, be in physical proximity with others, and use hand grip strength assessors during the geriatric assessment. Patients with ambulation problems were also hesitant to agree to geriatric assessment, which, though endorsed enthusiastically by staff, took 20 to 30 minutes to complete and exacerbated existing staffing shortages. Additionally, there was some overlap between the geriatric assessment questions and questions from the existing review of systems form.

Opportunities to Streamline Protocols

In response to these challenges, the QI team has identified opportunities to streamline protocols. First, the medication and supplement review process may benefit by identifying established patients who are likely to benefit from intervention versus mandating medication review for all new consults. Second, determining the specific personnel who will tell patients to expect a call from the pharmacist and where this communication is likely to occur in the workflow could make patients more comfortable with the medication review process. Lastly, the QI team has already integrated some of the geriatric assessment questions in the standard review of systems form to reduce assessment redundancy.

Closing Thoughts

The success of QI interventions relies on an amalgam of external and internal factors. Despite limited resources, staff shortages, and reduced patient volume due to COVID-19, the three participating cancer programs addressed communication and operational improvements. Holy Cross Hospital enhanced its navigation capacity for routing under- and uninsured patients to financial assistance, CalvertHealth Medical Center increased its dental screening and review of bone-modifying agents, and Central Care Cancer Center streamlined its process for medication review and geriatric assessment to improve adherence to oral chemotherapy regimens. Internal factors contributing to the cancer programs' successes included leadership commitment, staff enthusiasm, protected time to work on the intervention, and staff education. As a result of participating in the ACCC Visiting Experts Program, the cancer programs also improved staff communication and accountability. This multidisciplinary cooperation helped the cancer programs enhance existing service lines and create a foundation for consistency and collaboration to improve patient care.

Alexandra Howson, PhD, is an experienced medical writer, researcher, and educator with a strong background in principles of adult learning combined with clinical practice as a registered nurse. Based in Seattle, Howson trained in Scotland as a registered general nurse and has a doctorate in sociology.

ACCC thanks the staff at Holy Cross Hospital, CalvertHealth Medical Center, and Central Care Cancer Center for engaging in this multiple myeloma QI initiative and sharing their experiences. Additional resources about multiple myeloma are available at accc-cancer.org/multiple-myeloma.

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