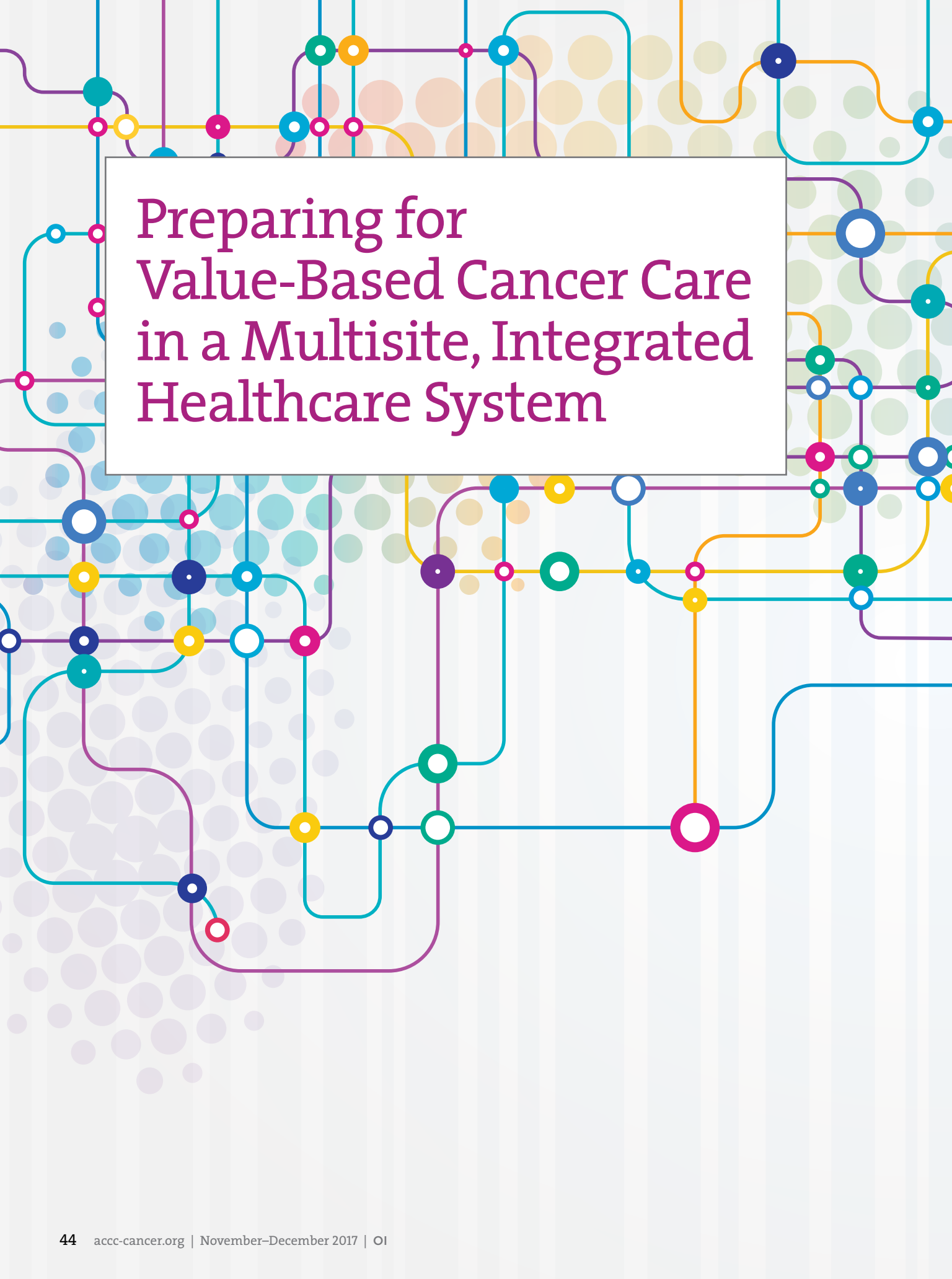

Preparing for Value-Based Cancer Care in a Multisite, Integrated Healthcare System

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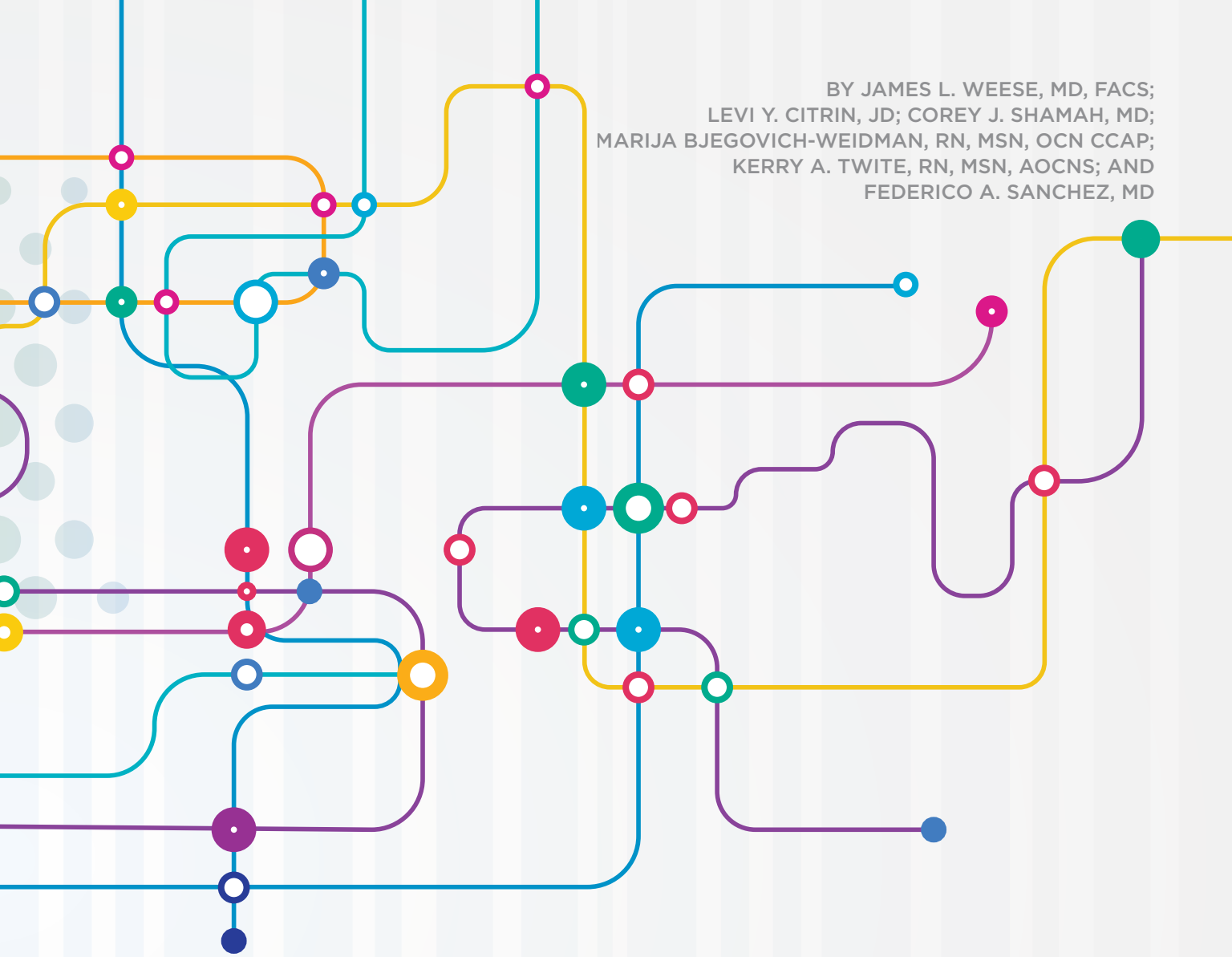

Aurora Health Care's 154 oncology physicians (39 medical oncologists, 101 surgical oncologists, and 14 radiation oncologists) currently care for more than 25,500 patients with cancer, including nearly 8,000 newly diagnosed patients annually. Our organization's oncology service line, Aurora Cancer Care, has 19 medical oncology sites and 11 radiation oncology treatment locations. All sites have access to Epic, the standard electronic health record (EHR) portal in our vertically integrated system.

As a National Cancer Institute NCORP grant holder, Aurora Cancer Care currently has 187 active clinical trials in oncology, with more than 1,150 enrolled patients. The medical oncology group is Quality Oncology Practice Initiative (QOPI) certified, and was recently recertified by the American Society of Clinical Oncology (ASCO).

Large, integrated healthcare organizations such as Aurora Cancer Care have the opportunity and expertise to identify areas of need and to design continuous improvement models for efficient, patient-centered cancer care that can provide a base model for other organizations. Our model begins with the patient.

Aurora Cancer Care requires all oncologists to declare a primary and secondary disease subspecialty. Once declared, oncologists commit to attending disease-specific CME programs and agree to respond to questions from their peers regarding specific patient issues.

Consistent Patient Teaching

Patient teaching typically takes about one hour of oncology nurse or registered pharmacist time. However, in a busy practice, interruptions to this activity can result in inconsistent processes and incomplete information delivery.[1-4] Large patient volume and widespread geography may further complicate fully informative

teaching. To improve in this area, Aurora Cancer Care first identified four critical patient-teaching principles:

1. General information regarding chemotherapy, including combination chemotherapy, needs to be provided.
2. Patients appreciate the option of sharing their educational information with their families.
3. Flexibility and variability in nursing education needs to be considered even when scripted, and these interactions are subject to interruption.
4. Patients appreciate time and communication with their nurses to ensure they understand information and instructions.

Next, with these principles in mind and to standardize teaching, we developed a series of more than 120 educational video vignettes delivered by our oncology certified nurses (OCNs) and oncology pharmacists system-wide. With input from medical oncologists, nursing educators, and the media services department, we produced a series of videos that were simple, informative, concise, reliable, and, most importantly, consistent.

Each drug-specific video is preceded by a "Chemotherapy" video explaining basic principles of chemotherapy—including information about different types of drugs, overall techniques of administration (intravenous and oral), potential side effects, preparation, and complications—and a "Cancer SOS" video describing suggested patient responses when concerns arise. These videos are then combined with other videos describing the specific drugs that a patient receives to provide a patient-accessible and patient-centered playlist. The videos, created in segments, allow for new combinations to be assembled, readily updated, and/or replaced.

Patients view the drug-specific video in the clinic. Afterwards, an OCN meets with the patient to review the information in the video and to answer any questions. The videos are housed on a password-protected website that patients, caregivers, and families can access.

OCNs and pharmacists practicing throughout our healthcare system helped to create and are featured in these videos, so patients get to virtually meet many of the providers who may treat them along the care continuum. These videos help patients understand the scope of Aurora Cancer Care's service line. In addition, if patients receive treatment in other parts of our healthcare system due to vacation or travel, they may already have some familiarity with providers from these other sites due to their appearance in the videos.

Staff expressed positive feedback regarding the creation of these videos. Nursing staff appreciated that the the video learning system allowed them extra time to perform value-added activities, while still preserving their educational interaction with patients. Many of our nursing and pharmacy staff said that they enjoyed the opportunity to be featured in the videos, and patients made positive comments about the uninterrupted learning they can also share with family members and caregivers.

Although the initial process was time-consuming and labor-intensive, it produced a library of important video documents that can be used with almost all newly-diagnosed patients at Aurora Cancer Care who are or will be receiving chemotherapy. It improved provider engagement, enhanced feelings of being part of the healthcare system, and increased patient satisfaction. As new drugs are approved, additional videos are produced and placed in the library.

In 2017 Aurora Cancer Care received an ACCC Innovator Award for the development and implementation of this library of drug-specific videos.

Development of Subspecialty Expertise

As cancer treatments become more complex, the need for disease-specific expertise, which a large healthcare group can provide, increases.[5] This subspecialty expertise can help with complex cases and assist providers, particularly those treating patients in rural and remote areas.

Aurora Cancer Care requires all oncologists to declare a primary and secondary disease subspecialty. Once declared, oncologists commit to attending disease-specific CME programs and agree to respond to questions from their peers regarding specific patient issues. Many oncologists attend system-wide disease-specific conferences at which new patients are prospectively discussed and participate in multidisciplinary clinics where patients are evaluated. This participation has allowed Aurora Cancer Care to develop disease-specific expertise within its healthcare system, providing a level of support to physicians dealing with complex disease states with which they have less experience.

To disseminate information about this disease-specific expertise and to foster greater understanding of this expertise, Aurora Cancer Care developed two quarterly newsletters: one for providers and one for patients. The provider newsletter highlights recent cancer program accomplishments, new activities, new physician recruits, a summary of new drugs, and other areas of interest by subspecialty. The patient newsletter focuses on much of the same information (written for layperson understanding), but also provides education on quality-of-life issues and art therapy.

The provider newsletter is delivered as an open e-newsletter to all Aurora Cancer Care physicians. We found that when this information was sent as an attached document, there was lower readership. Both newsletters are available in print at all Aurora Cancer Care sites.

Consistency of Therapies

To ensure consistent quality and evidence-based care throughout the healthcare system, treatment is directed by Aurora Cancer

Care physicians rather than mandated and selected by payers. However, with the understanding that patient outcomes need to be reproducible, reportable, and publishable, Aurora Cancer Care elected to have its cancer program evaluated and certified by QOPI, ASCO's quality assurance program. All Aurora Cancer Care sites of services and physicians are included in the survey and certification. Aurora Cancer Care—one of the largest healthcare systems in QOPI—was first certified in 2013 and recertified in 2016.

Within three months of Aurora Cancer Care's adoption of Via Oncology pathways, the medical oncology on-pathway rate was more than 80 percent, and our capture rate is now approximately 90 percent.

Developing consistency around treatment recommendations was a complex process. National Comprehensive Cancer Network (NCCN) guidelines play an important role, but they also allow substantial flexibility and variation in treatment choices. For example, NCCN guidelines provide 45 options for first-line therapy for metastatic breast cancer.[6] It was imperative for Aurora Cancer Care to prioritize clinical trials when available and to eliminate as much variation as clinically appropriate in the selection of therapy.

As Aurora Cancer Care worked to do this, it found that the degree of variation in chemotherapy delivery had been greatly underestimated. When asked, medical oncology leadership estimated that perhaps six different treatment algorithms were being used as first-line treatment for stage II breast cancer. However, after our IT department provided a print-out of all first-line treatments for stage II breast cancer, we were surprised by the magnitude of variation across 19 sites and 39 medical oncologists. (We made the decision to stop counting after 40 distinct variations.)

These data convinced our medical oncologists that Aurora Cancer Care needed to find a more consistent approach, so we began to research the growing field of oncology pathways. Several pathway vendors were evaluated, using the criteria that the pathway should be:

- Evidence-based and directed by treating physicians (both academic and community-based), not insurance companies
- Effective, safe, and cost-efficient
- Capable of facilitating discussion among participants
- Able to prioritize available clinical trials
- Flexible enough to rapidly incorporate changes based on new evidence or updated care standards.

In contrast to guidelines, pathways allowed easy integration of protocol-designed order sets into the EHR.[7-9]

After extensive review, Aurora Cancer Care elected to incorporate Via Oncology pathways (viaoncology.com). These pathways directly link to order sets embedded in Beacon, the medical oncology module of Epic (see Figure 1, page 49). Our medical oncologists prioritized clinical trials, which subsequently facilitated entry of patients into National Cancer Institute trials supported by our NCORP grant. Physicians declining a clinical trial needed to provide a reason (e.g., patient did not meet criteria) that could be tracked.

Additionally, treatment decisions are made by 18 disease groups, each co-chaired by an academic and a community oncologist. These groups, or disease-specific committees, meet quarterly to consider new protocols and—if changes are necessary—to formally incorporate these changes into the pathway within 10 working days. With our internal commitment to subspecialization, physicians are encouraged to attend the meeting for their specialty. This program has been sufficiently successful for our medical oncology group, as 7 of the 18 committees have an Aurora Cancer Care oncologist as community chair. (Other community chairs come from outside Aurora Cancer Care.) Breakthroughs in treatment and/or therapy are evaluated at ad hoc meetings so that they can be incorporated quickly into pathways.

Within three months of Aurora Cancer Care's adoption of Via Oncology pathways, the medical oncology on-pathway rate was more than 80 percent, and our capture rate is now approximately 90 percent. Clinical trials participation increased by two-thirds the first year after pathway adoption, and is continuing to increase.[10] Aurora Cancer Care is currently looking to incorporate Via Oncology pathways into its surgical oncology and radiation oncology practices.

Improving Communication Between Providers

Because of Aurora Cancer Care's multiple sites of services and extensive geographic area, communication among physicians is sometimes difficult. To improve this communication and enable our physicians to effectively present all new cases at system-wide disease-specific conferences, Aurora Cancer Care obtained two grants. The first grant was to install high-definition video conferencing at all sites of care. The second grant assisted with making high-definition video desktop equipment available system-wide for all oncologists.

With this video capability, physicians could participate in disease-specific conferences remotely from their hospital, cancer center, clinic, or office. This technology facilitated more robust

discussions of patient cases and allowed bidirectional visual radiologic and pathology review. In addition, this communication resulted in improvements to physician adherence to pathways.

At Aurora Cancer Care, we believe that using reproducible, evidence-based approaches to cancer care will reduce costs, reduce complications, and perhaps most importantly, will move the field forward.

Increased Case Presentation to Expert Groups

Today, patients are more frequently requesting physicians who have expertise in their specific type of cancer. At many of Aurora Cancer Care's remote, smaller clinic locations, it would be unreasonable to require this breadth of in-depth knowledge. With the explosive growth in new medicines, pharmacogenomics, precision medicine, immunotherapy, and clinical trials, it's simply not feasible to require all clinic locations to have expertise in all these areas for every disease. Nonetheless, patients expect their physician to have a fully up-to-date understanding of their disease, treatment options, and clinical trials.

System-wide subspecialization allows Aurora Cancer Care providers to deliver this level of expertise—regardless of the site of care. When one oncologist is faced with a particularly difficult or unfamiliar clinical presentation, an online group of disease-specific experts are available to answer questions or respond to specific clinical issues. This collaboration has been particularly valuable to oncologists who practice in smaller offices or at remote locations, as they do not feel isolated in dealing with clinical challenges that arise.[5]

Consistent Recommendations among Different Disciplines

More than ever before, quality cancer care requires a multidisciplinary approach to manage this complex disease. Therapeutic choices, sequencing, modalities, and sites of administration all must be considered. Yet, every hospital or clinic location within a large healthcare system cannot be equipped with every therapy and every supportive option. For example, intensivist-staffed intensive care units, operating rooms that can handle complex surgery requiring multiple disciplines, stereotactic radiosurgery, robotic surgery, and high-dose brachytherapy are not available at all Aurora Cancer Care sites.

System-wide, televised multidisciplinary conferences and disease-specific committees allow Aurora Cancer Care to offer its patients a full array of treatment options. With a fully integrated vertical delivery system, our medical oncologists, surgeons, and radiation oncologists can access resources at our tertiary and quaternary care facilities, seamlessly transitioning patients to those locations for services and/or treatments that cannot be delivered locally. Established pathways integrated into the EHR serve as another checkpoint to ensure consistent treatment is delivered across the healthcare system.

Increased Ability to Collate, Present & Publish Population-Based Results

One of the goals of the Biden Moonshot Initiative, which led to the $6.3 billion funding of the 21st Century Cures Act, was to enhance early communication of new data to disseminate results to other physicians, researchers, and the public. At Aurora Cancer Care, we believe that using reproducible, evidence-based approaches to cancer care will reduce costs, reduce complications, and, perhaps most importantly, move the field forward.

Pathway adoption has significantly increased our use of clinical trials to answer important treatment questions and define the best and most successful care. Treating many patients on established pathways provides a population with which to:

- Evaluate treatment success
- Define and reduce complications
- Reduce costs and save resources
- Continually refine clinical approaches to cancer.

All these factors contribute to the potential publication of unique data and patient results in multiple areas that can be disseminated to others and used toward further clinical advancements.

Alignment of Provider Goals in a Changing System

In the constantly changing environment of payment reform, aligning providers' incentives with the goals of the healthcare system is critical.[11] Although many were successful in the strictly fee-for-service days, we must prepare for the transition to global payment, pay-for-performance, and value-based initiatives.

As mentioned, Aurora Cancer Care has addressed the quality component of this transition in many ways, including:

- Physician subspecialization
- Multidisciplinary clinics and conferences with prospective presentation of newly-diagnosed patients
- Incorporation of pathways
- Prioritizing clinical trials and reinforcing evidence-based care
- Improved communication and interaction among providers across the healthcare system
- Requirement of quality certifications
- Development of seven disease-specific quality committees that

meet quarterly to identify disease-specific areas that can be improved in the transition to value-based care.

Alignment of financial goals is as critical as quality goals, and Aurora Cancer Care has addressed this in several important ways. Aurora Cancer Care physicians are now compensated for non-relative value unit (RVU)-generating obligations, including:

- Attending conferences and multidisciplinary clinics
- Publishing and presenting at national meetings
- Participating in educational CME and lay public events
- Focusing on quality of care
- Prioritizing clinical trials.

Aurora Cancer Care offers incentives to new physicians joining the medical oncology group to help with their clinical development. In addition, Aurora Cancer discourages extreme RVU production and unwillingness to share patients with colleagues, as this type of provider behavior can cause schedules to become overloaded, resulting in decreased patient and caregiver satisfaction and physician burnout.

In addition to providing compensation for non-RVU-generating activities on an hourly payment schedule, Aurora Cancer Care has instituted a pooling process for balancing income and work within the group. Physicians must generate a minimal number of RVUs if they want to be a part of the pool. If they exceed the RVU threshold, a percentage of the clinician's RVUs above this threshold are pooled. The threshold started at 20 percent in the first year and increased to 30 percent in the second year. To discourage physician overproduction and encourage subspecialization, a second threshold was set at approximately the 90th percentile. Any RVU pursuit over this level is "taxed," with 40 percent going into the pool. At the end of the year, any member of the medical oncology group that exceeds the lower threshold receives a full share of the pool, which is determined by dividing the revenue from the pool content of RVUs by the number of contributing members. This is paid out at the standard per RVU rate. Any member of the group who generated enough RVUs to get them into the pool was paid an equal share of the pool dollars.

This plan was developed by a subgroup of oncologists, comprised of providers at all levels of productivity. Aurora Cancer Care supported a transition period for physicians who would lose the most revenue through the RVU-sharing plan, compensating their projected loss by payment of 75 percent of the loss the first year, 50 percent the second year, and 25 percent the third year. This transition compensation was made as fixed annual payments.

All physicians agreed to move from 14 different payment models to the model described. During the first year of operation, the cost of the new payment plan came within 2 percent of the projections of the model.

Figure 1. How Via Oncology Integrates with Our EHR

The physician's schedule is automatically transferred from Epic into Via Oncology. With each new patient or with a change in clinical status requiring a change in treatment, the oncologist is required to stage the patient and answer clinically relevant questions (goal of treatment, line of therapy, molecular markers, etc.).

The provider is directed to the preferred therapy. When available, a clinical trial is always the first choice.

If selected, an alert is sent to the clinical trials nurse, who then meets with the patient.

If a clinical trial is not available or not selected, then the appropriate evidence-based treatment option is offered.

Treatment recommendations are ranked primarily by efficacy; if equally efficacious, then by toxicity; and if equally toxic, then by cost. A click on the choice immediately brings providers to the treatment plan in Beacon where the regimen is ordered.

Wrap-Up and a Look Ahead

In this article, Aurora Cancer Care has shared quality-based improvements that work well across a large system and geographic region. In addition to encouraging physician subspecialization and multidisciplinary care and high definition video communication, health system-wide benefits include:

- Delivery of more efficient and more consistent evidence-based care across all clinic locations—regardless of clinic size
- Improved clinical trials accrual
- The attainment of acceptable levels of compliance with evidence-based pathways
- Outcomes data that can be published to move the field forward
- Better work-life balance for physicians, including pay for non-RVU activity.

Most importantly, this new model allows Aurora Cancer Care to truly provide patient-centered care.

This is a tumultuous time for all of healthcare, but it is particularly complex for the delivery of cancer care. Multiple disciplines are involved, and standardization is required in all areas of evaluation and treatment. Fee-for-service medicine will continue to be phased out, and greater emphasis will be placed on efficiency and quality. We hope that other healthcare systems can learn from our experience and realize the same benefits as they too transition to a value-based payment system. OI

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