

A digital population tracking system helps improve colorectal cancer survivorship services | 18

Rapid practice change during COVID-19 leads to expansion and enduring innovations | 26

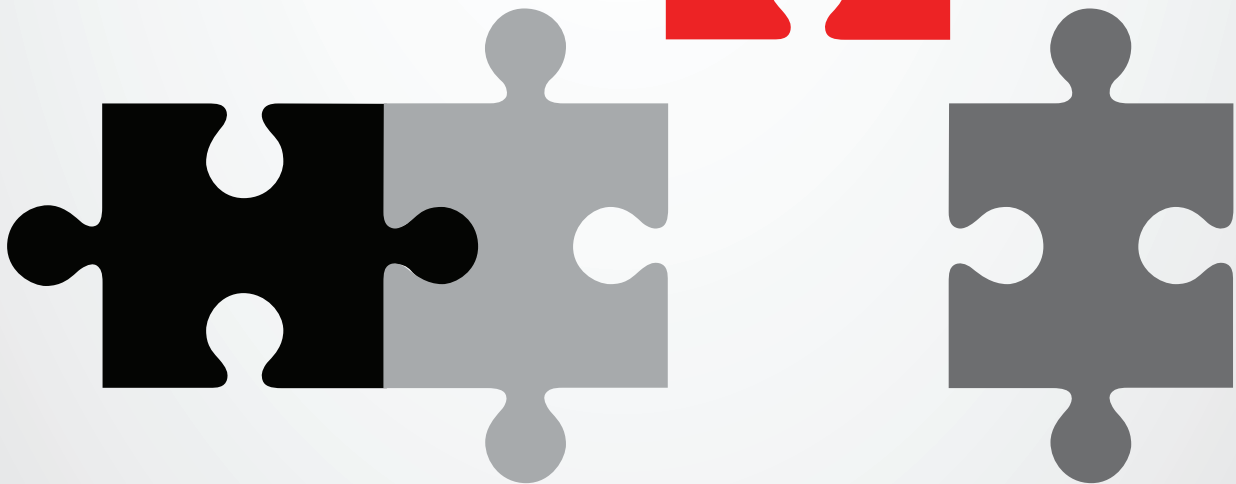
A nurse residency program improves knowledge of delirium in older patients with cancer | 46

ONCOLOGY ISSUES

This publication is a benefit of membership
Association of Community Cancer Centers

Vol. 36 | No. 6 | 2021

**Summit Explores
Role of Oncology
Advanced
Practitioners in
Equitable Cancer
Care Delivery**





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contents

Oncology Issues
Vol. 36 | No. 6 | 2021

18 A Digital Population Tracking System Helps Improve Colorectal Cancer Survivorship Services

by Raymond Liu, Aileen DeMucha Flores, Jeffrey Lee, Devon Check, Tilak Sundaresan, Yan Li, I-Yeh Gong, Larissa Nekhlyudov, Ronald M. Kline, and Leslie Manace

26 Rapid Practice Change During COVID-19 Leads to Enduring Innovations and Expansion of Integrative Oncology Services

by Danielle Gentile, Susan Yaguda, Dean Quick, Rebecca Greiner, Shamille Hariharan, and Chasse Bailey-Dorton

34 Real-World Lessons from COVID-19: Driving Oncology Care Forward

Spotlight on the Sutter Health Institute for Advancing Health Equity
by Amanda Patton

42 Implementing a Hematology-Oncology Nurse Practitioner Fellowship

by Heather Jackson and Karen Hande

46 An Oncology Nurse Residency Program Improves Knowledge of Delirium in Older Patients with Cancer

by Cassandra Vonnies, Janelle Brown, JoEllen Warnke, and Tina Mason

52 An Investigation of Self-Determined Work Motivation Among Young Adult Survivors of Central Nervous System Cancer

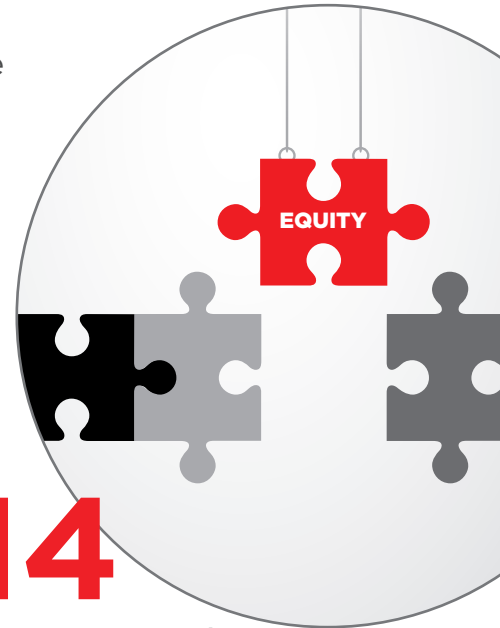
by Chelsea E. Greco, David R. Strauser, RahKyung Kim, Elizabeth Fine, and Cori Liptak

62 A Framework for Defining High-Quality Care for Patients With NSCLC

by Mark A. Socinski and Leigh M. Boehmer

70 Improving Care for Patients with Advanced Non-Small Cell Lung Cancer

Results from a national quality survey for thoracic surgeons, radiation oncologists, and medical oncologists
by Brendon Stiles, Leigh M. Boehmer, Candice Yong, and Percy Lee



14 Summit Explores Role of Oncology Advanced Practitioners in Equitable Cancer Care Delivery

At this virtual summit, participants identified 10 feasible and impactful “how to’s” for advanced practitioners to positively impact equity across three domains: care coordination and communication, clinical trials, and acknowledging and mitigating implicit bias.

DEPARTMENTS

2 From the Editor | A Focus on APPs

3 President’s Message | Connection is the Key

4 Fast Facts | Clinician burnout is impacting the patient experience, and more

6 Issues | Biosimilars are Overcoming Challenges of a Turbulent, Unfriendly Marketplace

8 Compliance | Discontinued Services in Oncology

10 Tools | Approved drugs, and more

12 Spotlight | Central Care Cancer Center, Kansas

83 Action | Highlights from the ACORI Call to Action Summit

86 Views | Put Yourself First—Words to Live By



Association of Community Cancer Centers

ONCOLOGY ISSUES

The Official Journal of the
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FROM THE EDITOR

A Focus on APPs

BY SIBEL BLAU, MD



Oncology care has improved with the development of new diagnostic and treatment modalities and the incorporation of more advanced technology. But while the number

of oncology patients and survivors is increasing, the growth of medical oncologists has lagged behind, and advanced practice providers (APPs) play a critical role in filling this care gap.


Traditional physician-APP teams not only share busy clinic loads but also focus on improving quality around non-billable services, such as patient education, treatment monitoring, procedures, peer reviews, and documentation. Enhanced collaboration between physicians and APPs ensures that patients receive cost-effective, high-quality care. Moreover, literature shows that APPs can help improve the patient experience and increase patient satisfaction.

As oncology care evolves in this value-based care era, oncologists are taking on additional responsibilities. Through participation in alternative payment models, including the Centers for Medicare & Medicaid Services' Oncology Care Model (OCM), we have reduced emergency department and hospital admissions and improved our use of end-of-life measures; however, these efforts also increased the burdens on busy practices through stringent data collection and reporting requirements.

Those who succeeded under the OCM created new programs and processes around quality and hired new clinicians and staff to achieve these goals. Most successful OCM participants focused on practice transformation using case managers and care coordinators and by providing extended clinic hours, including weekends.¹ A survey of oncologists participating in the OCM showed that 66 percent had employed APPs to help with case management, survivorship planning, and other functions, compared with non-OCM practices, which had hired 45 percent during the same time period.²

At Northwest Medical Specialties, we developed programs and processes to transform our practice into a value-based care model—all which required significant staff changes. For example, when we created our acute care clinics, we hired additional APPs to staff these clinics in our major hubs during the weekdays and to provide care to patients who come through triage and other channels. To deliver this level of care on the weekend (when our office was closed), we created a whole new call schedule for APPs.

Our more traditional physician-APP teams evolved into new, dedicated APPs who specialize in functions critical to creating a more efficient, cost-effective program. Survivorship planning, advanced care planning, and palliative care also evolved due to new programs and services developed in partnership with APPs. Dedicated inpatient APP positions were created for the larger hospital systems we attend; these clinicians provide daily care for patients with cancer and have improved communication with physicians.

As we look at the increasing demand for oncologists in this country,³ the contributions of APPs become even more significant. APPs are necessary to care for an aging population and a growing number of cancer survivors. To help these clinicians, carefully plan—and clearly define—the services APPs will offer and the functions they will carry out, including expectations in “productivity” versus “value.” Define the value APPs bring to your clinics and patients and develop models to improve APP retention that translate into better patient care and more efficient and cost-effective practices. 

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Connection is the Key

BY KRISTA NELSON, MSW, LCSW, OSW-C, FAOSW



In May, for my first President's Message, I wrote that to drive oncology forward "We need every member and every discipline, leader, payer, industry partner, and innovator working together to provide the best care possible in a sustainable way." Today, that message is truer than ever.

Although we all hoped that in 2021 we would see COVID-19 in the rearview mirror—with widespread vaccination curbing the number of new cases and pre-pandemic equilibrium settling across the healthcare enterprise—that is not how the year unfolded. Instead, over much of the summer, communities in many areas of the country were once more deluged with COVID-19 cases, their hospitals and healthcare facilities strained—sometimes beyond capacity—and their healthcare workforce exhausted.

For many, the past months have taken a heavy toll. And yet, we continue to lift each other up. We do this when we connect with our colleagues and work teams, with our friends and families, and in our neighborhoods and communities. ACCC members do this by connecting through ACCCeXchange posts, webinars, podcasts, virtual meetings, and this journal—sharing experiences, policies, workflow solutions, and practical wisdom—all of which I am immensely grateful. Throughout the pandemic, we've come to a renewed appreciation for how deeply our connection to each other matters.

As the oncology community continues to move forward, we have the opportunity to build on and strengthen the many bonds developed as we connected to overcome pressing pandemic-driven challenges—bonds that united our community in the common goal of ensuring that patients with cancer had continued access to quality care. Over the course of 2020, the oncology community also


came together to acknowledge a profound need to focus on improving equity, diversity, and inclusion in cancer care—recognizing equity as inherent to quality cancer care. In this work, too, our connectedness is the key.

ACCC shares in this commitment. Through ACCC education and resources, cancer programs and practices can find many paths to engagement in action for equitable cancer care delivery. Last spring, ACCC and Harborside convened a group of leading oncology advanced practitioners, to gain their perspective on the advanced practitioners' role in equitable cancer care delivery. Learn about the conversation and the group's consensus on 10 action steps on page 14.

How can a large integrated health system serving a diverse population create a health equity-focused culture? Read about Sutter Health's Institute for Advancing Health Equity and the impetus behind creation of its Health Equity Index tool (page 37). In a companion interview, health equity thought leader Maria Hernandez, PhD, shares some practical wisdom for programs of any size and resource level in addressing health equity:

My suggestion is start by looking at what your patients are saying. What do they say about your services? What do they say about their care experience? Invite them to the table for that conversation. You get a wealth of information about how you're doing with those vulnerable populations when you ask them: What is it like getting care here? What have you encountered? Do you feel like you are welcome? Do you feel like your doctor understood you? Do you feel like you were heard? Those conversations are, I think, really critical to get started with whatever program or policy changes you may need to make.

In other words, Dr. Hernandez is advocating that we connect with our patients.

As we turn the corner toward 2022, for oncology to drive equity forward: We need every member and every discipline, patient, leader, payer, industry partner, and innovator working together to provide the most equitable care possible in a sustainable way. 

Coming in Your 2022 ONCOLOGY ISSUES

- ▶ Patients with Cancer, Comorbidities, and No Primary Care Provider: Embedding a PCP in Oncology Helps Close a Gap in Care
- ▶ Integrating Spiritual Care in the Outpatient Oncology Setting
- ▶ Use of Pharmacy Informatics to Standardize Pharmacist Review of Oral Oncolytic Medications for Hospitalized Patients
- ▶ Mixed-Method Study Examining Initial Interactions of Oncology Patients with Multidisciplinary Cancer Care
- ▶ A Community Psychological First Aid Program in the COVID-19 Era
- ▶ Auricular Acupuncture for the Treatment of Cancer-Related Pain
- ▶ A Model for Integrating APPs in a Radiation Oncology Satellite Clinic
- ▶ A Day in the Life of a Quality Improvement Officer
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- ▶ Remote Monitoring of Patients with Cancer During COVID-19
- ▶ Developing a Cancer Care and Community Paramedicine Partnership
- ▶ 3D Virtual Reality: Standard of Care for Patients with Cancer and Caregivers



Clinical Research Terms Glossary

TOOL | Launched by the ACCC Community Oncology Research Institute (ACORI), this digital glossary of clinical research terms helps establish a standardized understanding across cancer care team members and serves as a tool to improve patient education and encourage shared decision-making conversations. Explore this online tool at acori-glossary.acc-cancer.org.



ACCC Pursues Health Equity Through ACORI

The ACORI Call to Action Summit, a two-day virtual event held September 13-14, 2021, brought together a diverse group of stakeholders—including community oncology professionals, research team members, patient advocates and advocacy groups, clinical trial sponsors, industry leaders, research networks, cooperative groups, and government and regulatory agencies—to explore practical ways to strengthen and diversify oncology clinical trials. Read more at acc-cancer.org/blog-acori-equity.



WEBINAR

Quality Improvement in Breast Cancer Testing

Hear from three grantee ACCC member programs about their findings and experiences in successfully orchestrating a QI project and expanding BRCA testing for eligible patients with breast cancer. Learn about open opportunities to participate in an ACCC-supported QI project, then see how ACCC's online self-assessment tools can help identify areas of improvement at your program or practice. Listen today at lacc-cancer.org/BRCA-QI-Webinar.



PODCAST

Financial Advocacy Playbook

Financial advocacy is a complex field of work that requires advocates to keep up with the evolving health-care landscape of payer policies, cancer treatment options, available financial assistance, and more. To support new—and experienced—staff who preform financial advocacy services, the ACCC Financial Advocacy Network created the “Ready, Set, Go! Financial Advocacy Playbook.” This episode of CANCER BUZZ TV explores how this robust resource helps relieve financial toxicity so patients can focus on their cancer care. Listen today at acc-cancer.org/FAN-Playbook



PUBLICATION

Comprehensive Care of Patients with Advanced Prostate Cancer

By reviewing the current state of personal engagement in care decisions for patients with advanced prostate cancer, this paper identifies obstacles to shared decision-making between patients and their providers and proposes new ways to better educate this patient population about their treatment options. Read more at acc-cancer.org/advanced-prostate-analysis.

fast

Clinician Burnout Is Impacting the Patient Experience



- **80%** of surveyed patients said their doctor or nurse seemed burned out during a healthcare visit over the last year.
- **1 in 3** patients believe their quality of care may have been impacted by clinician burnout.
- **70%** of respondents said they were alarmed about high levels of stress and exhaustion among clinicians.
- **1 in 4** respondents said they experienced a healthcare visit that felt rushed.

Source: What Happens When Clinician Burnout Enters the Patient Exam Room? explore.wheel.com/hubs/Wheel%20-%20Consumer%20Survey%20Report%20FINAL.pdf.

Best Practices for Including Patient Advocates in Your Research Program

- Strive for clear communication with between advocates and providers.
- Clarify roles, expectations, and limitations upfront.
- Be clear about pathways and timing for funding.
- Provide background readings when helpful.
- Ask for help on specific study activities.
- Ask for review of recruitment materials.
- Ask for review of study questionnaires.
- Troubleshoot problems that arise.
- Create “space” for patient advocates to weigh in.

Source: Strom C. Integrating the Community Voice in Cancer Research. acc-cancer.org/home/learn/research-clinical-trials.



facts



On the heels of “Operation Warp Speed,” which spurred development of COVID-19 vaccines, approximately 66% of patients with cancer and their families surveyed think clinical trials aimed at improving cancer treatments and therapies remain too slow.

Source: June 2021 survey of COTA, Inc., conducted by independent research firm PureSpectrum. cotahealthcare.com.



Study finds that oncologists feel underprepared to communicate the results of tumor genetic profiling to patients, particularly to Black patients who have more mistrust around healthcare and genetic information and testing.

Source: “Oncologists’ Perceptions of Tumor Genomic Profiling and Barriers to Communicating Secondary Hereditary Risk to African American Patients.” Poster session at the virtual scientific program at the American Society of Clinical Oncology 2021 Annual Meeting.

Study Confirms That Americans Neglected Their Healthcare During COVID-19 Pandemic

- **59%** of those surveyed said they experienced adverse health symptoms but did not seek treatment for them. Of this group, **79%** reported they already suffer from co-morbid conditions, like cancer obesity, chronic lung diseases, diabetes, heart conditions, and obesity.
- When asked why they did not seek treatment for a given symptom, most people cited their fear of contracting COVID-19 (**58%**). More than half (**51%**) also cited the cost of care, and **34%** cited the hassle of scheduling an appointment. Nearly **1 in 3** (**29%**) reported that their doctors were not allowing appointments; the same percentage (**29%**) cited loss of insurance.
- Of those already undergoing treatment for an illness when the pandemic started, **61%** said they suspended treatment at some point during the pandemic, and **66%** postponed or canceled a medical appointment.
- **50%** of parents reported that their children missed medical appointments during the pandemic, including routine check-ups and appointments related to existing illness.

Source: National survey of 1,078 Americans. tempus.com/study-confirms-that-americans-neglected-their-healthcare-during-covid-19-pandemic.



Biosimilars are Overcoming Challenges of a Turbulent, Unfriendly Marketplace

BY BLAKE MCCREERY-CULLIFER, CPRP



With total spending on U.S. cancer care projected to rise 34 percent from 2015 to 2030 to \$245 billion, biosimilars can play a role in helping reduce those costs. Biosimilars are newcomers to the pharmaceutical market, and they have already gained a strong footing. A biologic is a drug that is derived from living organisms or contains components of living organisms, whereas a biosimilar is a nearly identical but organically less complex copy of the referenced biologic.

After specified novel biologics receive U.S. Food and Drug Administration (FDA) approval, manufacturers can develop and submit biosimilars for approval as well. To be successful, the biosimilar manufacturer must demonstrate that its product has no clinically meaningful difference from its referenced biologic in terms of safety and effectiveness. The FDA uses an abbreviated drug approval pipeline for biosimilars that is meant to expedite their market entry and reduce the cost of their development. However, even

after obtaining FDA approval, patents for biologics must expire before biosimilars can launch, a problem made clear to several biosimilar companies. Only around 60 percent of the 31 biosimilars approved since 2015 have made it to the market.

Due to their shorter development time, biosimilars are approximately 15 percent to 20 percent cheaper than their more commonly prescribed reference biologics. Biosimilars' manufacturers pass a portion of their cost savings on to patients through decreased market costs, and they have potential to save billions in claims. Their presence on the drug market also creates competition with expensive biologics, potentially lowering costs for everyone. And biosimilars can provide treatment alternatives for patients with complex needs who may require timely, accessible, and affordable treatment options that biologics cannot provide. In recognition of this, the FDA expanded the biosimilar category to include 90 additional molecules in March 2020.

Unfair Business Practices

The volume of new FDA-approved biosimilars fell sharply in 2020 to just three approved drugs—a stark contrast from the year before, in which the FDA approved 10 new biosimilars. Since 2015, the year in which the first biosimilar earned FDA approval, the number of approvals has risen each year—until 2020. This is likely due at least in part by researchers across the globe turning their attention to vaccine development in the wake of the COVID-19 pandemic.

In addition to the global pandemic, ongoing lawsuits from referenced biologics' manufacturers suing biosimilar manufacturers are having a negative impact on the development and approval of new biosimilars. Biologics' pharmaceutical companies have motive to disrupt the entry of new, cheaper treatment options into the market. Small biosimilar manufacturers often do not have the resources of biologic manufacturers to fight frivolous lawsuits. Court-imposed delays and legislative fees are expensive, which dissuades smaller companies from continuing work in the biosimilars market. Brand-name biologics also leverage their discounts and rebates to maintain marketplace advantage. Additionally, payers are moving slower than expected toward adding biosimilars to their preferred drug list. This is partly caused by legacy contracts with brand-name biologics. These methods are very effective—consider that congress created the biosimilar approval

Biden's July 9, 2021, executive order on promoting competition in the American economy includes a provision that requires the Department of Health and Human Services to make the FDA biosimilars approval framework more transparent and easier to follow.



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pathway in 2010. Since much of this litigation is founded on dubious claims and weighed down in bureaucratic red tape, President Biden recently issued an executive order that challenges unfair business practices in the biosimilars market.

Legislative Solutions

Biden's July 9, 2021, executive order (EO) on promoting competition in the American economy includes a provision that requires the Department of Health and Human Services (HHS) to make the FDA biosimilars approval framework more transparent and easier to follow. What that will mean exactly remains unclear until HHS makes public its specific recommendations. HHS leadership has reported that it will be months before their plan is finalized and made public.

That said, the EO requires HHS to promote the entry of biosimilars into the pharmaceu-

tical marketplace. The order draws its authority from the Advancing Education in Biosimilar Act of 2021 (S.164). The EO echoes this law, which has in effect expanded the regulatory responsibilities of the HHS secretary by mandating the prioritization of biosimilars and enhancing a biosimilars education page on the FDA's website, which contains comprehensive provider and patient resources and education.

In another attempt to promote the use of biosimilars, in April 2021, Reps. Kurt Schrader (D-OR) and Adam Kinzinger (R-IL) introduced into congress the BIOSIM Act (H.R.2816) to increase provider reimbursement for biosimilars, thus making them more attractive for providers to prescribe to their patients. Providers are currently reimbursed for biosimilars based on the average sales price of the drug +6 percent. This bill would increase reimbursement for biosimilars by 2

percent for five years, giving providers additional motivation to prescribe less expensive biosimilars to their patients. Recent research indicated that physicians are trusted by their patients, with most reporting that if asked by their physician to utilize a biosimilar they would.

Taken together, Biden's EO, the BIOSIM Act of 2021, and the recently passed Advancing Education on Biosimilars Act have set the stage for a market that embraces the cost-savings potential of biosimilars. ACCC will continue to advocate for and monitor the policy landscape as it relates to biosimilars. Share your drug cost and access concerns by emailing: bmccreery-cullifer@acc-cancer.org.



Blake McCreery-Cullifer, CPRP, is associate, Cancer Care Delivery and Health Policy, at the Association of Community Cancer Centers, Rockville, Md.

compliance

Discontinued Services in Oncology

BY TERI BEDARD, BA, RT(R)(T), CPC

Everyone working in oncology understands that there are days where not everything goes as planned. This could be due to an equipment malfunction, patients who may not be able to finish or who cannot be administered therapy during their scheduled visit, or patients who have a reaction to therapy. Regardless of the reason, the ability to bill for services will depend on why the service had to be discontinued. The key to identifying whether or how to bill for services hinges on the encounter (visit) documentation and how the discontinued service(s) was addressed.

Radiation Oncology Scenarios

In this specialty, service is considered discontinued when at least a partial dose of radiation was delivered. In situations where patients show up for their scheduled radiation treatment delivery but no radiation is delivered, there is no billable service. Treatment delivery codes identify that radiation was administered to the patient as part of their treatment plan. For example, if patients make it as far as the treatment room and are on the treatment table but it is determined that they cannot be treated and no therapeutic radiation is administered, there is no billable charge. Cancer programs and practices would *not* report a treatment delivery code, such as Current Procedural Terminology (CPT®) **77412** and **modifier 52** (reduced services for surgical procedures without anesthesia).

If patients are brought into the treatment room, positioned for treatment, and some of the therapeutic dose is delivered but patients signal that they cannot continue, billing for this type of discontinued service will depend on how the remaining dose was handled:

- **Scenario 1: The remaining therapeutic dose is administered separately on the next day.** In this scenario, the therapeutic planned dose of radiation is completed

the next day. Documentation would reflect that the patient's treatment was stopped before the full dose was delivered and the remaining dose is enough that it will be given separately the next day. The first portion is documented but is *not* billed. The treatment delivery is billed when the final portion of the planned dose is delivered. The dose is carried out in full, so there is no reduced service to be reported with split codes and modifiers.

- **Scenario 2: The remaining therapeutic dose is recalculated into the remaining fractions of treatment to increase the daily dose, but the patient still achieves the planned total dose.** In this scenario, physicians document that the remaining amount of radiation can be safely recalculated and added to the remaining fractions of treatment. The medical dosimetrist performs new basic dosimetry calculations for the remaining treatments and added dosage. With the appropriate orders and documentation, CPT **77300** is billed for the new calculations. The first portion of treatment is considered a completed delivered dose and is billed as normal with the corresponding treatment delivery code. The remaining fractions are also billed with the appropriate corresponding treatment delivery codes.
- **Scenario 3. The remaining therapeutic dose is determined by the physician to be so low that the treatment is considered complete and no adjustment is needed for the remaining course of treatment.** In this scenario, physicians document that the radiation amount remaining is minimal and that it will not have an impact on the radiobiological effects. Physicians document that the treatment is considered complete and no adjustment to the remaining fractions is needed. The treatment is billed and supported with the appropriate treatment delivery code.

Discontinuation of services does not only occur during treatment delivery. There may be scenarios that occur with patients prior to the treatment delivery process. For example, patients may agree to treatment and have the initial setup simulation performed but change their mind afterward or there is an error noted on the treatment plan and it must be replanned before treatment can commence. These billing scenarios are considered on a case-by-case basis.

If patients originally agree to treatment and then change their mind, the services provided to them up to the point of withdrawing from treatment can be billed. These services can be billed if the treatment planning was completed and patients alert the physician that they no longer want to proceed when they arrive for treatment or if patients simply call to express this change. An internal review is necessary to determine what services are considered billable by ensuring that only those services documented *prior* to the withdrawal from treatment are billed.

If, however, it is determined that there is an error or a change is needed in the treatment planning prior to treatment delivery—not due to a change by the patient but instead due to a change(s) made by staff or physicians—only one set of services is billable. In other words, it is not appropriate to penalize the patient with multiple charges for services that did not pass quality assurance or when a last-minute change is noted. In these scenarios, the services used to treat the patient are recommended to be the billed charges. This practice may result in need for credit of original charges or a notation that the original charge date was used but there was a change supported in the medical record. As with the other scenarios, these situations should be considered case-by-case, and an internal review is recommended to determine what happened to cause the needed change.

Medical Oncology Scenarios


On the medical oncology side, billing determination depends on what happened as part of the encounter and whether any drugs were administered to the patient or the planned procedure was fully completed.

- **Scenario 1: No drugs are administered to the patient.** In this scenario, if patients present and it is determined that they cannot be treated with the prescribed regimen (possibly due to a contraindication not previously identified or patients' lab values are not within acceptable levels to support treatment) and if no drugs are administered, there is no billable charge for the drugs or administration services. It may be possible to bill for the port flush or lab draw, depending on the situation, but the drugs are *not* billable.
- **Scenario 2: A portion of the prescribed therapy is administered before being discontinued.** In this scenario, if any portion of the drug is administered and discontinued due to some contraindica-

tion or reaction by patients, the administered and discarded drug(s) could be billed to the payer with the corresponding ICD-10-CM code to identify what occurred. Because many drug administration codes are time-based procedures, review the start/stop times to determine the most appropriate code based on the time of the administration. If the drug administration is discontinued at the onset of the planned infusion, the use of **modifier 52** (reduced service) or **modifier 53** (discontinued procedure) may be applicable because the minimum amount of time for the planned service was not met. If rescue medications are required for the patient's reaction, those medications and administration services may be billed with supporting documentation.

- **Scenario 3. Not able to complete procedure as planned.** In this example, patients are scheduled for a bone marrow biopsy to be performed; however, upon initiation of the procedure, the procedure

was not able to be carried out due to the patient's body habitus. Because the physician initiated the procedure but was not able to complete the procedure as planned, the service is considered billable; however, a modifier is necessary to indicate that the procedure was discontinued. In this scenario, hospitals would append **modifier 52** (reduced service) and physicians would append **modifier 53** (discontinued procedure).

Due to the various scenarios that may lead to questions about whether discontinued services can be billed, it is important for physicians to appropriately document what occurred. This assists staff in understanding how or what services can be billed and documents the patient's story for future encounters. 

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tools



Approved Drugs

- On Sept. 2, the U.S. Food and Drug Administration (FDA) approved **Brukinsa® (zanubrutinib)** (BeiGene, beigene.com) for adult patients with Waldenström's macroglobulinemia. On Sept. 14, the FDA granted accelerated approval to Brukinsa for adult patients with relapsed or refractory marginal zone lymphoma who have received at least one anti-CD20-based regimen.
- On Sept. 17, the FDA approved **Cabometyx® (cabozantinib)** (Exelixis, Inc., exelixis.com) for adult and pediatric patients 12 years of age and older with locally advanced or metastatic differentiated thyroid cancer that has progressed following prior vascular endothelial growth factor receptor (EGFR)-targeted therapy and who are ineligible or refractory to radioactive iodine.
- On Sept. 15, the FDA granted accelerated approval to **Exkivity™ (mobocertinib)** (Takeda Pharmaceuticals, Inc., takeda.com) for adult patients with locally advanced or metastatic non-small cell lung cancer with EGFR exon 20 insertion mutations, as detected by an FDA-approved test, whose disease has progressed on or after platinum-based chemotherapy.
- On Sept. 28, the FDA granted approval of a new indication for **Erbitux® (cetuximab)** (Eli Lilly and Company, lilly.com) in combination with **Braftovi® (encorafenib)** (Pfizer, pfizer.com) for the treatment of adult patients with metastatic colorectal cancer with a BRAF V600E mutation, as detected by an FDA-approved test, after prior therapy.
- On Sept. 22, the FDA approved **Jakafi® (ruxolitinib)** (Incyte Corp., incyte.com) for chronic graft-versus-host disease after failure of one or two lines of systemic therapy in adult and pediatric patients 12 years and older.
- On Aug. 18, the FDA granted accelerated approval to **Jemperli (dostarlimab-gxly)** (GlaxoSmithKline LLC, gsk.com/en-gb/) for adult patients with mismatch repair deficient recurrent or advanced solid tumors, as determined by an FDA-approved test, who have progressed on or following prior treatment and who have no satisfactory alternative treatment options.
- On Aug. 31, Merck (merck.com) announced that the FDA converted the indication for **Keytruda® (pembrolizumab)** from accelerated to a full approval for the treatment of first-line advanced urothelial carcinoma.
- On Aug. 10, the FDA approved the combination of **Lenvima® (lenvatinib)** (Eisai, us.eisai.com) plus **Keytruda** for first-line treatment of adult patients with advanced renal cell carcinoma.
- On Aug. 19, the FDA approved **Opdivo® (nivolumab)** (Bristol Myers Squibb, bms.com) for the adjuvant treatment of patients with urothelial carcinoma who are at high risk of recurrence after undergoing radical resection.
- On Oct. 1, the FDA approved **Tecartus® (brexucabtagene autoleucl)** (Kite Pharma, kitepharma.com) for adult patients with relapsed or refractory B-cell precursor acute lymphoblastic leukemia.
- On Aug. 25, the FDA approved **Tibsovo® (ivosidenib)** (Servier Pharmaceuticals, servier.us) for adult patients with previously treated, locally advanced or metastatic cholangiocarcinoma with an isocitrate dehydrogenase-1 mutation as detected by an FDA-approved test.
- On Sept. 20, the FDA granted accelerated approval to **Tivdak™ (tisotumab vedotin-tftv)** (Seagen Inc., seagen.com) for adult patients with recurrent or metastatic cervical cancer with disease progression on or after chemotherapy.
- On Aug. 13, the FDA approved **Welireg™ (belzutifan)** (Merck, merck.com) for adult patients with von Hippel-Lindau disease who require therapy for associated renal cell carcinoma, central nervous system hemangioblastomas, or pancreatic neuroendocrine tumors, not requiring immediate surgery.

Drugs in the News

- NuCana Plc (nucana.com) announced that the FDA granted fast track designation to **Acelarin (NUC-1031)** for the first-line treatment of patients with advanced biliary tract cancer.
- Bluebird bio (bluebirdbio.com) announced it has completed the rolling submission of its biologics license application (BLA) to the FDA for **betibeglogene autotemcel (beti-cel) gene therapy** in adult, adolescent, and pediatric patients with β -thalassemia who require regular red blood cell transfusions, across all genotypes.
- The FDA has granted **Enhertu® (trastuzumab deruxtecan)** (AstraZeneca, astrazeneca.com) breakthrough therapy designation for the treatment of adult

patients with unresectable or metastatic human epidermal growth factor receptor 2-positive breast cancer who have received one or more prior anti-human epidermal growth factor receptor 2-based regimens.

- Merck (merck.com) announced that the FDA accepted and granted priority review for a new supplemental BLA for **Keytruda® (pembrolizumab)** for the adjuvant treatment of patients with renal cell carcinoma at intermediate-high or high risk of recurrence following nephrectomy (surgical removal of a kidney) or following nephrectomy and resection of metastatic lesions. Merck also announced that the FDA accepted for review a new supplemental BLA seeking approval for Keytruda as a single agent for the treatment of patients with advanced endometrial carcinoma that is microsatellite instability-high or mismatch repair deficient who have disease progression following prior systemic therapy in any setting and are not candidates for curative surgery or radiation.
- Regeneron Pharmaceuticals, Inc. (regeneron.com) announced that the FDA accepted for priority review the supplemental BLA for **Libtayo® (cemiplimab-rwlc)** to treat patients with recurrent or metastatic cervical cancer whose disease progressed on or after chemotherapy.
- Lantern Pharma (lanternpharma.com) announced that the FDA granted orphan drug designation to **LP-184** for the treatment of glioblastoma multiforme and other malignant gliomas.
- Novartis (novartis.com) announced that the FDA accepted and granted priority review to the new drug application for **Lu-PSMA-617** for the treatment of metastatic castration-resistant prostate cancer in the post-androgen receptor pathway inhibition, post-taxane-based chemotherapy setting.
- Bristol Myers Squibb (bms.com) announced that the FDA accepted the supplemental BLA for both **Opdivo® (nivolumab) in combination with**


Yervoy® (ipilimumab) and Opdivo in combination with fluoropyrimidine- and platinum-containing chemotherapy as first-line treatments for adult patients with unresectable advanced, recurrent, or metastatic esophageal squamous cell carcinoma.

- Bristol Myers Squibb (bms.com) announced that the FDA accepted its supplemental BLA for **Orencia® (abatacept)** for the prevention of moderate to severe acute graft-versus-host disease in patients six years of age and older receiving unrelated donor hematopoietic stem cell transplantation.
- Bristol Myers Squibb (bms.com) announced that the FDA accepted for priority review the BLA for the **relatlimab and nivolumab fixed-dose combination**, administered as a single infusion, for the treatment of adult and pediatric patients (12 years and older and weighing at least 40 kg) with unresectable or metastatic melanoma.
- Sutro Biopharma Inc. (sutrobio.com) announced that the FDA granted fast track designation to **STRO-002** in certain patients with advanced ovarian cancer.
- BeiGene (beigene.com) announced that the FDA accepted for review a BLA for **tislelizumab** as a treatment for patients with unresectable recurrent locally advanced or metastatic esophageal squamous cell carcinoma after prior systemic therapy.
- Shanghai Junshi Biosciences Co., Ltd. (junshipharma.com/en/Index.html) and Coherus BioSciences, Inc. (coherus.com) announced that the FDA granted breakthrough therapy designation to **toripalimab in combination with chemotherapy (gemcitabine and cisplatin)** for the first-line treatment of metastatic nasopharyngeal carcinoma (NPC). The companies also announced completion of the rolling submission for their BLA to the FDA for **toripalimab in combination with gemcitabine and cisplatin** for first-line treatment for patients with advanced recurrent or metastatic NPC and toripalimab monotherapy for second-line or above

treatment of recurrent or metastatic NPC after platinum-containing chemotherapy.

- Kite Pharma (kitepharma.com) announced that it has submitted a supplemental BLA to the FDA for **Yescarta® (axicabtagene ciloleucel)** to expand its current indication to include the treatment of adults with relapsed or refractory large B-cell lymphoma in the second-line setting.

Devices and Assays in the News

- Novocure (novocure.com) announced that the FDA granted breakthrough designation to the **NovoTTF-200T™ System**, a Tumor Treating Fields delivery system intended for use together with atezolizumab and bevacizumab for the first-line treatment of patients with unresectable or metastatic liver cancer.
- Thermo Fisher Scientific (corporate.thermofisher.com/us/en/index.html) announced that the FDA granted pre-market approval to **Oncomine Dx Target Test** as a companion diagnostic to identify patients with isocitrate dehydrogenase-1 mutated cholangiocarcinoma who may be candidates for Tibsovo. The FDA also granted premarket approval to Oncomine Dx Target Test as a companion diagnostic to identify patients with EGFR exon 20 insertion mutation-positive non-small cell lung cancer who are candidates for Exkivity.
- The FDA authorized the marketing of **Paige Prostate** (Paige, paige.ai), a software used to assist medical professionals who examine body tissues in the detection of areas that are suspicious of cancer as an adjunct to the review of digitally scanned slide images from prostate biopsies.
- Roche (roche.com) announced the FDA approval of the **VENTANA MMR Rx Dx Panel**, a companion diagnostic test to aid in identifying patients whose solid tumors are deficient in DNA mismatch repair and who may be eligible for Jemperli monotherapy. 

spotlight

Central Care Cancer Center, Kansas



Providing high-quality, community-based cancer care to patients across Kansas and western Missouri, Central Care Cancer Center has reimaged rural-based oncology to make it the equal of its academic- and urban-based competitors. Earning accreditation from the American College of Radiology and certification from the American Society of Clinical Oncology's Quality Oncology Practice Initiative is evidence of the high-quality of care patients at Central Care Cancer Center experience.

In 1990, Claudia Perez-Tamayo, MD, FACR, FACRO, founded this private practice along with her husband, Alfredo Lopez, who serves as the cancer center's chief executive officer. "When I first came to Kansas, I saw that there was a lot of opportunity to grow," Dr. Perez-Tamayo says. "I thought, why do you need to be traveling when you are sick with cancer? Wouldn't it be nice if we had a [cancer] center close to home that can provide the best care that there is?"

Since its inception, Central Care has grown to include 13 freestanding clinics that



Claudia Perez-Tamayo, MD, FACR, FACRO

are all located next to local hospital sites throughout Kansas and western Missouri. This structure allows the practice to offer comprehensive oncology care, including services (e.g., lab, radiology, imaging) provided in partnership with the local hospitals near which the clinics are located.

Standardization is Key

Central Care has standardized its available services and staffing model to ensure that all patients receive treatment and supportive care services at the clinic closest to their homes. Due to the geographical sprawl of the practice, staff are connected through the electronic health record and access the same patient charts. Staff collaborate on every treatment plan through a peer-review process to make certain individual treatment plans result in the best patient outcomes. Patient education is prioritized before treatment begins. Providers have access to conference rooms that contain anatomical models and virtual tools that they can use to demonstrate to patients and their families where in the body their disease is located and how its placement or treatment may provoke specific side effects.

Medical and radiation oncology each have their own entrance in every Central Care clinic location, where front-desk staff greet and check-in patients. Staffing structures for medical and radiation oncology are also standardized across all Central Care's clinics. At least one medical oncologist, one radiation oncologist, front-desk staff, medical scribes, nurse practitioners, a financial counselor, and nursing staff are on site at each location.

Radiation oncology also employs a therapist, dosimetrist, and physicist in each clinic who provide IGRT, IMRT, SRT, SBRT, SRS, and brachytherapy. Medical oncology employs additional nursing staff (i.e., infusion nurses and clinical trial nurses) who support the specialty.

The medical oncology clinic is made up of an infusion suite and a dedicated pharmacy in which infusion nurses compound chemotherapies on site. A nursing station is located at the front of each infusion suite, so staff can view all patients as they receive treatment. The size of each infusion suite is often dependent on the size of a given clinic's location; suites can include between 8 to 30 chairs, and private rooms are available at some Central Care locations. To further accommodate each clinic location's patient volume needs, infusion suites are customizable—more chairs and pumps can be brought in when necessary—and infusion nurses can travel if patient volumes increase at any location.

Central Care offers surgical oncology services through a network of surgeons from its local partner hospitals and specialists in the surrounding communities. "Wherever specialists are located, we work to provide the best care for our patients and to keep a streamlined [patient] chart so that at any moment, if a problem arises, prompt care may be administered," says LeAnn Powers, the marketing director at Central Care Cancer Center. The practice also offers financial counseling, genetic counseling, social work, clinical trial participation, wigs and prosthetics, chaplain support, and nutritional services to patients at their local clinics. Other supportive care services (e.g.,

support groups, physical therapy) are offered through local hospitals, depending on the hospital's service capacity. Regardless of where patients access these services, all are free to patients, who may also self-refer.

Serving Middle America

Because Central Care's locations are scattered throughout the middle of the United States, some patients may still have to travel long distances to receive their treatment. Founded on a mission of bringing patients quality cancer care close to their homes, Central Care offers several options to patients if they are unable to travel due to lack of access to transportation or physical inability. Staff coordinate ride shares with other patients who are treated in the same location, and they are happy to schedule appointments when most convenient for patients to travel. Additionally, patients can take advantage of discounted rates for several motels and RV campgrounds in local communities.

Some patients at Central Care's locations are migrant workers who work in the large agricultural or meat-packing industry in rural regions. These patients may be a single mom with no insurance or a man just laid off from work. Regardless of a patient's circumstances, Central Care staff take pride in their ability to provide oncology care without turning any patient away, irrespective of citizenship or insurance status. Furthermore, Central Care offers bilingual services at many of its locations, so non-native English speakers can better understand their treatment and care.

Medicare beneficiaries make up a large percentage of Central Care's patient population. These patients often experience

financial difficulties when they are faced with the "donut hole" (a Medicare Part D coverage gap) that requires them to take full responsibility for any prescription drug costs after they reach their Part D plan limit. To help keep patients out of this gap, Central Care's financial counselors proactively identify patients covered by Medicare who are underinsured and help them apply to available financial assistance resources. Multiple financial counselors work in each of Central Care's locations.

Redefining Rural-Based Cancer Care

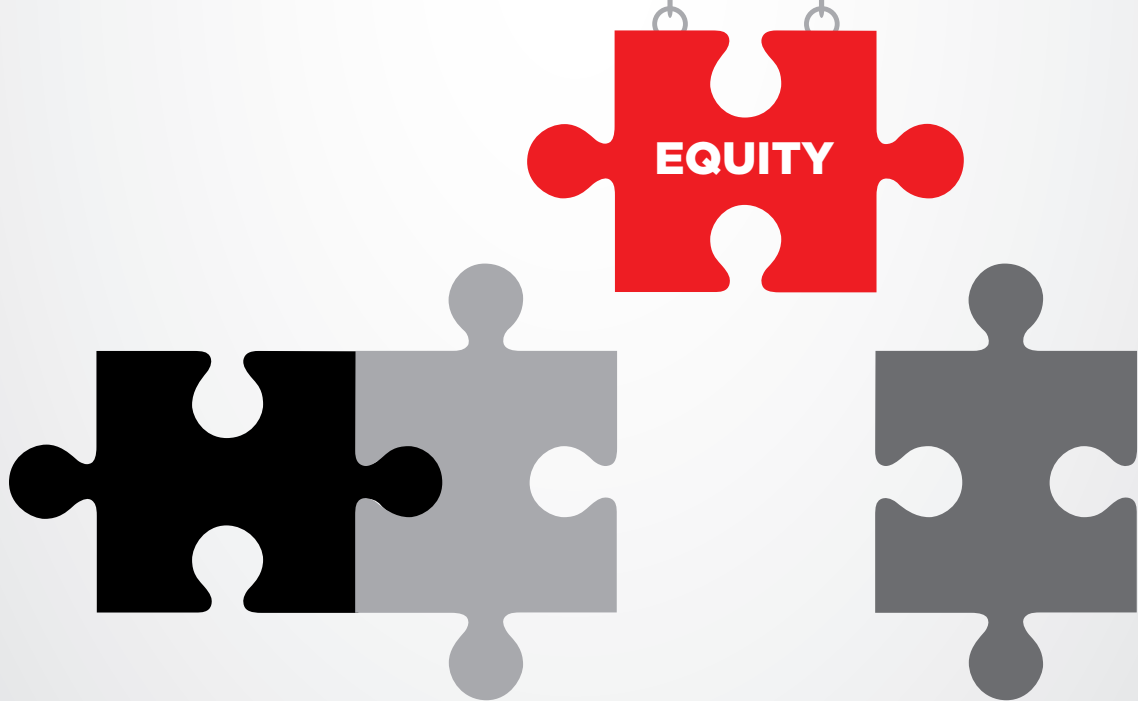
Central Care offers its patients Phase III clinical trials through its partnership with the National Cancer Institute Community Oncology Research Program. Through its dedicated nursing staff, Central Care screens all patients for clinical trial eligibility. Each Central Care location is staffed by one clinical trial nurse, who screens patients, answers questions, and provides information to qualifying patients.

The practice has also long offered telehealth visits to reduce patient travel times, increase care quality and efficiencies, and improve access to other specialties. Its telehealth offerings began before COVID-19 and have since expanded. Through telehealth, staff can connect with larger academic facilities and their specialists.

Follow-up visits, chemotherapy education, genetic counseling, hematology visits, and tobacco cessation counseling are all offered to patients via telehealth. It is through this vast connection and passion that Central Care staff truly deliver on the practice's mission. "We face limitations, but we go out of our way, beyond the call of duty, to call centers across the world to find the best course of care," says Dr. Perez-Tamayo. "The institution doesn't treat you; it's the people."



Summit Explores Role of Oncology Advanced Practitioners in Equitable Cancer Care Delivery



In spring 2021, the Association of Community Cancer Centers (ACCC) and Harborside co-hosted a virtual summit bringing together an invited group of oncology advanced practitioners (APs) for focused conversation on equitable cancer care across three domains: care coordination and communication, clinical trials, and acknowledging and mitigating implicit bias. The goal: to better define the role APs in cancer programs and practices around the country can play in achieving more equitable cancer care. The three facilitated summit sessions included nurse practitioners (NPs), clinical nurse specialists, physician assistants (PAs), and oncology pharmacists, along with oncology and non-oncology physicians and patient advocates.

The virtual summit discussion framework was designed to elicit maximum engagement and dynamic exchange among participants. Each session followed a four-part format:

- Opening conversation on the current state of equitable cancer care delivery and intersectionality with the advanced practitioners' roles
- Sharing perspectives on an ideal future state, achievable in a three-year time frame
- Identifying actionable gaps between the current and ideal future state of equitable care delivery
- Brainstorming action steps to address these gaps. To optimize the conversation on the virtual platform, participants totaled approximately 30 each day.

Highly trained professionals employed across the spectrum in oncology, advanced practitioners—as colleagues, educators, trainers, clinicians, program managers, researchers, authors, administrators, quality improvement leaders, and more—are well positioned to help advance equitable cancer care delivery.

Advancing Equity

The COVID-19 public health emergency, spanning 2020 to 2021, focused national attention on the devastating real-world consequences of health inequities in the United States.¹ Over recent months, the nation has witnessed how racism, bias (both explicit and implicit), and lack of equity can result in social injustice, brutality, morbidity, and mortality. In recognition that health equity is fundamental to achieving population and societal health, there is renewed commitment across the U.S. healthcare enterprise to advancing health equity in the delivery of healthcare, a deeper understanding of the intersectionality between inequities and health outcomes, and identifying effective strategies for improving equitable healthcare delivery with the overarching aim of reducing health disparities.

Accessing the Full Value of Oncology APs

With an interdisciplinary membership, ACCC has long supported the capacity for members of the cancer care team to work to the top of their licensure. In January 2021, ACCC issued a Statement on the Value of Oncology Advanced Practitioners,² which emphasized that, in the evolving oncology landscape, APs are playing an increasing variety of roles—from the chairside to the C-suite. Highly trained professionals employed across the spectrum in oncology, advanced practitioners—as colleagues, educators, trainers, clinicians, program managers, researchers, authors, administrators, quality improvement leaders, and more—are well positioned to help advance equitable cancer care delivery.

Even as the role of advanced practitioners in oncology is expanding, in two recent research surveys—one of NPs and PAs and the other of NPs, PAs, clinical nurse specialists, and pharmacists—respondents reported spending the majority of their time in direct patient care, including such responsibilities as counseling, prescribing, patient management, and follow-up.^{3,4} All of these activities provide opportunities for NPs, PAs, and other APs in oncology to impact equity across three domains: care coordination and communication, clinical trials, and acknowledging and mitigating implicit bias.

Taking Action

At the conclusion of the summit, participants and members of the Summit Planning Committee collated and refined recommended action steps identified under each of the discussion domains. Via an online polling platform, participants were asked to rank these recommendations according to two criteria: feasibility and impact. Through this consensus-driven process, action steps receiving the highest scores (i.e., the most votes for *both* feasibility and impact) were identified. Through this process, the summit identified 10 feasible and impactful “how-to’s” for oncology APs to advance equitable cancer care delivery.

- **Encourage and engage in active shared decision-making.** Create resources for oncology APs to learn to foster open dialogue with patients and engage in dynamic shared decision-making that elicits the patient’s care preferences.

- **Identify existing data collection metrics and equity screening tools.** A unifying theme across summit sessions was the need to curate and build on existing resources. Potential action steps include establishing a working group of advanced practitioners to conduct a literature review (including grey literature) and research to aggregate existing data collection measures and screening tools and identify tools that integrate into electronic health records. Such resources are vital to accurately measure health disparities and demonstrate the value of care coordination and to develop an understanding of where and how care coordination and/or communication breaks down relative to disparities for specific patient populations.
- **Deliver a consistent message about clinical trials.** Help level-set clinical trials for patients and all members of interdisciplinary teams by delivering a consistent message that clarifies how clinical trials represent a standard of care and that every patient with cancer should be considered for clinical trial participation. Advocate for cancer programs/practices to include “discussion of clinical trials” in AP job descriptions.
- **Step into research.** Extend advanced practitioners’ role in research. Develop quality improvement continuing medical education programs so that APs can gain the added skills needed to plan and conduct research.
- **Advocate for inclusive cancer clinical research.** Advocate to empower APs to sign off on clinical trial orders, an important step in support of their evolving role on clinical research teams. As the healthcare professional often most engaged with clinical trial participants, APs can amplify patient-voiced barriers to trial enrollment, challenges faced by patients who are participating in clinical studies, and, at the trial’s completion, the importance of sharing aggregate trial results with study participants.
- **Support and engage in research publication.** Support expansion of advanced practitioners’ role in publication and develop needed curated resources, tools, and education. Areas of opportunity cited by participants include unpublished clinical trial data that APs may utilize to develop and publish original research papers as lead author and co-authors, particularly in the area of novel agent adverse event prevention, mitigation, and management.
- **Ask for training resources for APs related to diversity, equity, and inclusion in clinical trials.** Provide access to training resources, such as short videos, podcasts, or webcasts, that explore issues related to diversity, equity, and inclusion in cancer clinical trials and that include APs interacting with patients to describe trial enrollment, what clinical trial participation entails, and the voices of patients who have participated in clinical trials.
- **Create a checklist to support a top-of-mind focus on equity.** Create an equity-focused checklist to serve as a low-cost, easily integrated (ideally into the electronic health record) tool that APs can use to support awareness of implicit bias. Summit

participants recognized that implicit (or unconscious) bias exists in all human beings and is a consequence of how the human brain is hardwired. At the same time, awareness of the subtle ways in which implicit bias may affect equitable cancer care delivery through a process of regular self-assessment, intervention, and re-assessment is essential to effect change at the individual level.

- **Call for equity in medical professional curricula.** Advocate for medical professional graduate programs to examine their curricula and take action to address explicitly and implicitly biased training, including the requirement that faculty be trained in implicit bias awareness. Encourage your professional organizations/societies to join in a collective statement of support for this action to graduate curriculum programs and accrediting/credentialing bodies.
- **Request that your professional society reserve space at events and in publications for discussion of implicit bias education and equity in cancer care delivery.** APs together with professional organizations, such as the American Academy of Physician Assistants, ACCC, the Advanced Practitioner Society for Hematology and Oncology, Harborside, and others can commit to publishing on these issues to help disseminate best practices in moving toward more equitable cancer care delivery.


Quality Care is Equitable Care

Across the summit sessions, common areas of concern and action emerged. Advancing equitable cancer care delivery will require commitment and engagement from the entire healthcare enterprise and a multi-pronged approach, summit participants agreed. Prioritizing health equity and ensuring that equity is recognized as synonymous with quality care will demand focused action on every level: individual, professional, cancer program, hospital, health system, and across all healthcare sectors (patients, providers, payers, and industry). As an expanding workforce of highly trained professionals in diverse roles throughout the oncology care delivery system, APs hold positions in all areas of oncology and have opportunities to drive and foster engagement in elevating equity through personal education and action, leadership within professional organizations and their healthcare facilities, research and publications, and advocacy. However, summit participants cautioned that the capacity of APs to advance equitable cancer care delivery will depend on factors outside of their direct control, including:

- Time to engage in this work
- Educational resources
- Recognition and requirements from accrediting bodies related to diversity, equity, and inclusion education and training

As the healthcare professional often most engaged with clinical trial participants, APs can amplify patient-voiced barriers to trial enrollment, challenges faced by patients who are participating in clinical studies, and, at the trial's completion, the importance of sharing aggregate trial results with study participants.

- Data, metrics, and tools to benchmark and measure progress
- Commitment from healthcare entities to assessment and evaluation of equitable care delivery as an ongoing process
- Support from professional societies and organizations
- Health system commitment to prioritizing diversity, equity, and inclusion.

Read the full summit report and additional resources at acc-cancer.org/OAP-Summit. You can also access and listen to CANCER BUZZ mini-podcasts from summit leadership. For more information on the ACCC-Harborside Summit to Define the Role of Oncology Advanced Practitioners in Equitable Cancer Care Delivery, contact Elana Plotkin at eplotkin@acc-cancer.org. 

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A Digital Population Tracking System Helps Improve Colorectal Cancer Survivorship Services

There are 17 million cancer survivors in the United States and 1.5 million estimated survivors of colorectal cancer.¹ As the number of colorectal cancer survivors continues to increase, there is a growing imperative for cancer programs and practices to implement sustainable survivorship models to address survivors' unmet needs.^{2,3} A general framework around survivorship care has been defined, including a proposed survivorship model specific to survivors of colorectal cancer that calls for integrated delivery networks to implement a survivorship care model in a real-world setting.⁴⁻⁸ Kaiser Permanente Northern California (Kaiser Permanente), an integrated health system serving 4.5 million patients across 21 cancer centers and more than 250 outpatient facilities, has previously reported on its colorectal cancer prevention efforts and the associated reduction in five-year colorectal cancer mortality, without racial or ethnic disparities in survival.⁹⁻¹¹ As of 2019, Kaiser Permanente had an estimated 250,000 cancer survivors, jointly managed by advanced practice providers (APPs) and oncologists—with transition to primary care for long-term survivorship care—within a single shared electronic health record (EHR).

To ensure proper follow-up care and surveillance for survivors of colorectal cancer, we developed a novel computerized survivorship surveillance program called the Permanente Medical Group Precision Tracking System. The tracking system was developed in 2017 to operationalize a consensus-driven,

Software systems that electronically track patients with cancer and the use of quality metrics and measures to encourage best practices is the foundation for evidence-based survivorship care programs.⁹

evidence-based approach to post-treatment surveillance. In this article, we describe the key elements of the system (Table 1, page 20) and discuss its impact on survivorship care recommendations. The applicability of this computerized population-based monitoring program to survivorship care in other settings, using EHR and commercially available software, is especially broad as our Kaiser Permanente cancer centers represent a wide spectrum of practices across Northern California, ranging from urban settings to remote and rural areas that are socio-economically and ethnically diverse. Software systems that electronically track patients with cancer and the use of quality metrics and measures to encourage best practices is the foundation for evidence-based survivorship care programs.⁹

Table 1. Key Elements in Establishing Population Management for Colorectal Cancer Survivorship

Precision Tracking	Solutions Developed
Data elements	Cancer staging End-of-treatment date
Data systems	Translate established consensus care to standard operating protocol (see Figure 2) Use existing data solutions, like Microsoft Excel and Tableau (see Figure 3) Create dashboard metrics
Communication with clinical teams	Utilization of EHR “problem list”

EHR = electronic health record.

Identifying the Patient Population and Developing Protocols

As the first step for creating a population-level tracking system for survivorship care, we developed a methodology to identify Stage I through Stage III survivors of colon cancer, aged 18 to 85, through our EHR. Real-time, automated identification of these patients required two critical data elements: 1) cancer staging information and 2) the date active treatment ends. To achieve EHR integration, we asked our providers to input staging data into the colon cancer specific section of the EHR “problem list” (Figure 1, page 21). Next, we created a dedicated location in the problem list to document the end-of-treatment date (Figure 1). To improve staging compliance, over time we are incorporating a “hard stop” in the EHR that would prevent completion of charting if staging data has not been entered.

After finalizing agreements across all Kaiser Permanente cancer centers, we developed surveillance tracking protocols for carcinoembryonic antigen (CEA) testing and computed tomography (CT) scans (Figure 2, page 22). These agreements were forged by subspecialty-driven consensus based on NCCN Guidelines® recommendations, literature review, and national and international practice models for frequency and duration of follow-up with the goal of delivering value-based care while optimizing early recurrence detection.¹²⁻¹⁹

Leveraging Our Data Systems

To reduce delays and costs related to technology integration with the existing EHR for data collection, we created data dashboards to monitor our progress using Tableau (Figure 3a, page 23) and Microsoft Excel (Figure 3b, page 23). Patients are identified

based on colorectal *International Classification of Diseases*, 10th Revision (ICD-10) codes in the problem list. Colon cancer survivors are automatically identified and surveillance tracking is initiated when the treating provider completes the end-of-treatment date as part of the survivorship care plan and staging tool documentation. Nurse coordinators then utilize the Tableau report and Excel “action lists” to identify patients for targeted chart review, document survivorship tracking enrollment in the EHR, and place standing orders for serum CEA testing and CT scans using pre-approved order sets. The Microsoft Excel “action lists” and Tableau reports are updated daily.

Developing and Staffing Our Tracking System

To staff the precision tracking system program, we recruited a dedicated team of registered nurse project coordinators, a master’s prepared registered nurse manager, and a physician medical director—all with experience in population management. Each project coordinator manages approximately 1,500 patients. Project coordinators are tasked with placing orders and referrals for CEA levels and CT scans, as described above. Prior to outreach, the coordinators perform a targeted chart review to look for clinical changes or if new preferences for surveillance are declared. Co-ordinators send patients a secure message or letter depending on patients’ access to the online Kaiser Permanente platform—a web- and app-based patient engagement portal that allows patients to review their medical information and interact with their healthcare team through the EHR. A cycle of outreach (defined as three outreach attempts, two weeks apart) is completed if a patient continues to be due for surveillance. After the last attempt, the coordinator contacts the treating provider to inform them the outreach cycle is completed and a six-month hold is placed in the system. After an additional six months, coordinators conduct a new targeted chart review and the cycle of outreach begins again.

Disenrollment from the surveillance tracking system is based on chart review and preferences communicated by patients or primary care providers. Providers can also order additional CT scans or CEA testing separately if they prefer surveillance studies to occur sooner.

All precision tracking functions are managed centrally, negating the need to develop these surveillance systems at each individual cancer center or clinic site.

We created dashboard metrics to monitor tracking efforts, and we have seen a demonstrated increase in recommended care as a result of this system, which has now enrolled more than 1,600 colorectal cancer survivors. For example, prior to the start of the Kaiser Permanente Precision Tracking System program, baseline estimates of adherence with CT and CEA surveillance of patients with Stage II through Stage III colorectal cancer between 2011 to 2014 were 48 percent and 81 percent, respectively. (We defined adherence as test completion between 6 to 18 months post-diagnosis.) From August 2018 to July 2019, after implementation of the precision tracking system, adherence with CT and CEA surveillance improved to a median monthly rate of 92 percent and 90 percent, respectively.

Figure 1. Example of “Problem List” Documentation for Precision Tracking*

The screenshot shows two problem list entries. The first entry is for 'CASE / CARE MGMT, CANCER SURVIVORSHIP' with code Z71.89. The text describes a patient enrolled in 'Precision Tracking – CRC survivorship', verified with Dr. Jane Smith, and followed by an oncology survivorship clinic. The second entry is for 'COLORECTAL CANCER' with code C19. It includes a 'Cancer Staging' table with columns for Date, Classification, and Stage. The table shows a date of 10/11/2020, a classification of Clinical, and a stage of Stage IIIB (T3, N1, M0). Below the table are links for 'Cancer History' and 'Oncology Treatment Summary'.

Date	Classification	Stage
10/11/2020	Clinical	Stage IIIB (T3, N1, M0)

“Case/Care Management, Cancer Survivorship” problem list allows documentation of hyperlinked survivorship follow-up plan, with accountability for patient and provider preferences. “Colorectal Cancer” problem list code contains staging information. “Cancer History” documentation includes a section for end-of-treatment date, and “Oncology Treatment Summary” contains the survivorship care plan.

In addition to CEA testing and CT scans, we found an existing population management system for colonoscopy surveillance integral to the Permanente Medical Group Precision Tracking System (Figure 2). Our gastroenterologists determine colonoscopy surveillance intervals for patients with Stage I to Stage III colorectal cancer and enter them into the Patient Reminder, Outreach Management & Population Tracker (PROMPT) system, which assists with population health management and coordinates all population-level preventive activities for Kaiser Permanente.

The Permanente Medical Group developed PROMPT as a custom-build add-on to its EHR for accurate tracking of cancer screening and other disease prevention measures for all patients, regardless of their cancer history. Each month, PROMPT notifies Kaiser Permanente Gastroenterology Departments of patients with Stage I through Stage III colorectal cancer due for colonoscopy surveillance. Gastroenterologists review each patient for surveillance eligibility and then medical assistants perform active outreach. A population health management team led by a part-time clinical leader (gastroenterologist) oversees the PROMPT colonoscopy surveillance tracking program. Providers can deactivate PROMPT reminders in the system if a patient is not clinically appropriate for screening outreach.

Improving Patient and Cross Disciplinary Provider Communication

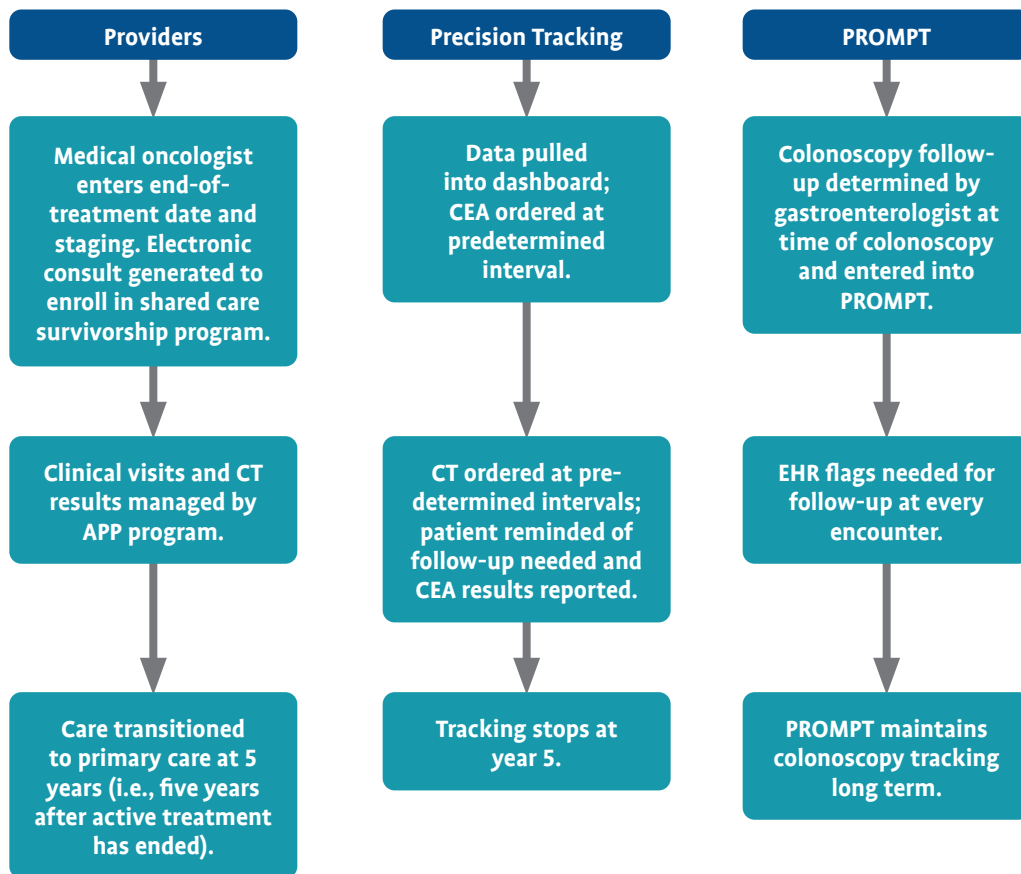
To facilitate communication, CEA testing results are directed to coordinators who communicate normal results to patients via a secure message on the Kaiser Permanente portal or a letter. All CT results and abnormal CEA results are routed to the electronic

The Permanente Medical Group Precision Tracking System program addresses key performance indicators proposed for high-quality survivorship care, such as disease surveillance and professional communication, and may also contribute to other aspects of oncology survivorship care.²³

in-baskets of the treating providers, who then communicate directly with patients.

To communicate across disciplines, we created a unique entry under the EHR “problem list” for survivorship: Case/care management cancer survivorship (ICD 10 = Z71.89). The “problem list” contains pertinent active patient health issues and was adopted by Kaiser Permanente as a clinical management tool for care communication. With this newly created “problem list” code, all care team members, including primary care providers, can access and update dedicated information about the population management program and shared survivorship care model (Figure 1). The recently enacted 21st Century Cures Act requires health-care providers to offer patients access to their health information

Figure 2. Parallel Pathway of Precision Tracking and PROMPT Systems to Support Provider Teams



APP = advanced practice provider; CT = computed tomography; CEA = carcinoembryonic antigen; EHR = electronic health record; PROMPT = Patient Reminder, Outreach Management & Population Tracker.

in their EHR.²⁰ This includes making imaging results and clinic notes available on the Kaiser Permanente portal, where patients can access their survivorship documentation directly. Though our oncology providers still use survivorship care plans to communicate survivorship recommendations to patients, our primary care physicians have expressed preference for the “problem list” as the main communication method of survivorship care in the EHR.

Discussion

To our knowledge, this is the first software-based system developed by a large integrated health network to actively track and manage a population of colorectal cancer survivors. The approach incorporates proposed systems engineering models in cancer survivorship care by looking broadly at the work system, processes, and outcomes of a survivorship program.²¹ It also addresses the call for novel approaches to colorectal cancer survivorship in integrated care systems by leveraging technology tools to manage tasks, such as CEA and CT monitoring, at the population level, and it

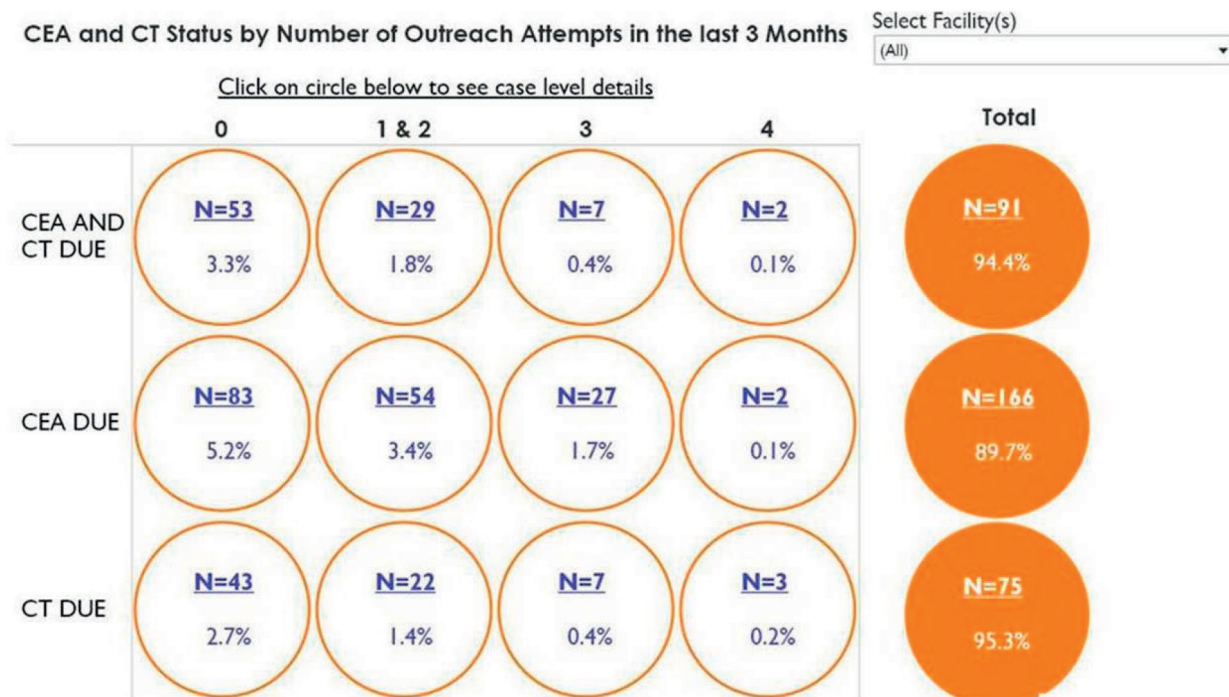
fills a significant gap in knowledge about available models of cancer survivorship that facilitate care beyond in-person visits.^{8,22}

Data tools, such as Microsoft Excel and Tableau, are adaptable to other models of oncology care, and the model relies on well-known structural elements (e.g., “problem lists”) which are found in all major EHRs.

The Permanente Medical Group Precision Tracking System program addresses key performance indicators proposed for high-quality survivorship care, such as disease surveillance and professional communication, and may also contribute to other aspects of oncology survivorship care.²³

As a result of our standardization of best practices, we have heard anecdotally from members of the survivorship care team that recommendations for surveillance, communication, and care coordination have improved. There is also more time for providers to focus on other aspects of survivorship care, including symptom management, psychosocial support, health promotion, and chronic disease management.

Figure 3a. Tableau Report*



*Rows represent the number of patients who are due for outreach. Columns represent the number of outreaches that have been already attempted. Percentages in open circles represent the percentage of patients who are due for outreach.

Figure 3b. Excel “Action List”

RN comments	Facility	Patient_Name	Patient_MRN	hereditary	age	final_stage	end_of_treat_date	on_KPorg	Last_CT	next_appt
scheduled 1/1/2021	xxx	Smith, John	xxx	No	60	3	1/1/2020	Y	4/1/2020	1/4/2021


Action lists are reviewed to determine specific patients for targeted chart review and outreach, and these lists contain clinical information that can help with tracking.

With success around care adherence measures and positive feedback from provider teams, Kaiser Permanente has expanded the implementation of population management in survivorship care to other cancers, such as breast cancer, testicular cancer, non-small cell lung cancer, head and neck cancer, and melanoma. Furthermore, our providers are actively using the “problem list” to capture treatment exposures, long-term risks, and late effects, as well as other factors affecting survivorship care, such as ileostomy care. We are actively investigating the integration of patient reported outcomes measures into our dashboards.

For most healthcare settings, one of the biggest challenges in implementing a population management program for cancer survivorship is reimbursement. In developing its population tracking systems, Kaiser Permanente—a fully integrated health system—was not encumbered by prior authorization barriers. Under our integrated model, providers are salaried and work

together across disciplines, departments, and hospitals; their compensation is not driven by relative value units, and metrics of success are focused on improving prevention, screening, and adherence to quality guidelines. Because Medicare reimbursement is tied to medical complexity, as evidenced in the active “problem list,” utilization of survivorship “problem list” codes in visit documentation has the potential to support population management approaches to survivorship care under Medicare.

Kaiser Permanent has developed a novel colorectal cancer survivorship population tracking system and program that reflects its integrated approach to cancer prevention and preventative health. The formula of building technology systems to sustain and track care adherence and allowing providers to concentrate on high-value patient interaction, rather than increasing “desktop medicine” tasks, is crucial to improving care in cancer surveillance and beyond. Support for further research and reimbursement for

survivorship care will help ensure that we address the growing needs of survivors. These same tools can serve as the foundation for studies of surveillance approaches, including different surveillance intervals and novel approaches to early recurrence detection. 

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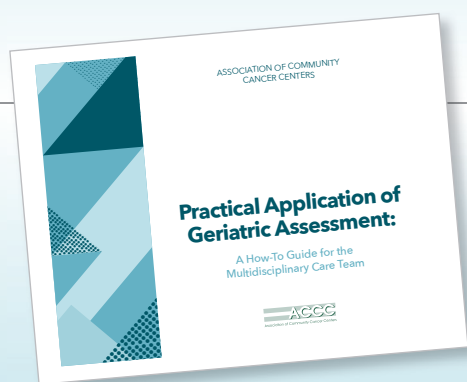
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Thank you to Pfizer Oncology for their collaboration and support in developing these resources.

Rapid Practice Change During COVID-19 Leads to Enduring Innovations and Expansion of Integrative Oncology Services



The COVID-19 pandemic forced cancer programs and practices to rapidly adapt how they deliver integrative oncology services that help patients manage symptoms and optimize their quality of life. Additional stressors imposed by COVID-19 increased the need for mind-body practices, natural products, and lifestyle modifications. However, literature on best practices for the provision of integrative oncology services during a pandemic is sparse. Our article seeks to describe strategies, challenges, and enduring innovations for successful integrative oncology practice during and beyond the COVID-19 crisis. Effective strategies include expanded telemedicine, online resource libraries, virtual interactive groups and classes, and additional infection prevention protocols. We also describe telemedicine challenges, such as technical difficulties and access to technology, “Zoom fatigue,” inability to perform hands-on physical exams, distractions outside the clinical environment, and obstacles to maintaining a virtual therapeutic relationship. Leveraging its skilled facilitators, Levine Cancer Institute in Charlotte, N.C., overcame many of these challenges through proactive responses, flexibility—demonstrated by staff and patients—and the use of virtual platforms. Our experience led to enduring telehealth expansion, livestream groups and classes, on-demand digital repositories of integrative practices, and targeted services delivered at the most clinically appropriate time(s). These insights may be adapted by other institutions to maintain integrative oncology services during and after unprecedented events, like a global pandemic.

“Unprecedented,” “new normal,” “challenging times,” and “rapidly evolving situation” are all buzzwords and phrases we heard during the coronavirus disease 2019 (COVID-19) pandemic. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first identified in December 2019 in Wuhan, China,¹ and declared a global pandemic in March 2020.² Healthcare organizations immediately adapted to serve patients while minimizing risk of COVID-19 transmission. This challenge created an opportunity to study oncologic healthcare innovations.³

Oncology Care During COVID-19

Compared to the general public, patients with cancer—whose immune systems are already weakened by treatment—are estimated to be two times as likely to contract COVID-19 and at a higher risk for severe COVID-19 complications.⁴ Patients with

active cancers, particularly hematologic malignancies, are at the highest risk.⁵ However, individuals receiving cancer care, such as chemotherapy, immunotherapy, molecularly targeted therapies, or bone marrow transplants within three months before hospitalization, have no overall increased risk of death, according to a study on COVID-19 outcomes.⁶

During a pandemic, such as the one experienced in 2020 to 2021, infection prevention may include postponing outpatient visits, elective surgery, and chemotherapy for patients with low risk of disease progression. These decisions should be made between the care team, patient, and their care partners, with acknowledgement that delayed treatment can lead to additional stress and apprehension about disease progression and survival. Services that can be provided virtually should pivot to telehealth.⁷ These approaches are reiterated by the American Society of Clinical Oncology in consideration of resource scarcity⁸ and other

clinical guideline reviews.^{9,10} During the current public health emergency, telehealth rapidly expanded to provide supportive care for quality of life concerns, including distress, emotional support, nutrition, social work, and integrative medicine. However, in-person care is necessary for imaging, procedures, and laboratory work that cannot be delayed.^{11,12}

Increased Need for Integrative and Complementary Services

Cancer survivors demonstrated higher levels of stress and symptom burden during COVID-19 compared to pre-pandemic benchmarks.¹³ Drivers of stress and anxiety included delays in diagnosis, continuing cancer treatments, and fear of coronavirus infection.¹³⁻¹⁵ These concerns were exacerbated among those with greater risk of mortality and severe illness from COVID-19.^{4,15} Though supportive oncology care is sometimes not prioritized like cancer treatment because of the financial strains placed on healthcare systems during a national pandemic or public health emergency,¹⁶ the loss of control and additional stressors experienced by patients during these events make integrative oncology services more valuable across all aspects of the cancer care continuum (e.g., newly diagnosed, currently in treatment, long-term survivorship).¹⁷

Integrative oncology is a “patient-centered, evidence-informed field of cancer care that utilizes mind and body practices, natural products, and/or lifestyle modifications from different traditions alongside conventional cancer treatments. It aims to optimize health, quality of life, and clinical outcomes across the cancer care continuum and to empower people to prevent cancer and become active participants before, during, and beyond cancer treatment.”¹⁸ Integrative medicine physicians guide patients through their treatment plans, including mind-body practices, such as relaxation techniques, yoga, music therapy, and tai chi, which have demonstrated reductions in anxiety, fear, depression, and pain.¹⁹ When used alongside conventional medicine, integrative approaches can improve stress, sleep, and quality of life.²⁰⁻²² For example, acupuncture can be effective for nausea, vomiting, and analgesia.²³⁻²⁵ Body-based therapies, such as massage and lymphatic drainage, may also soothe anxiety and pain when delivered by an appropriately trained, certified practitioner.¹⁹

Integrative Oncology Practice During COVID-19

Limited literature exists on the impact of COVID-19 on integrative oncology care. In a 2020 study, Ben-Ayre et al. demonstrated feasibility of an online Israeli treatment program made up of weekly practitioner-guided self-treatments, including movement, mind and body interventions, and acupuncture.²⁶ That same year, Mao and Gubili described the role of virtual integrative and supportive care at Memorial Sloan Kettering in New York, N.Y., which includes virtual fitness, meditation, yoga, dance, tai chi, and music classes.²⁷ Participants noted significant reductions in anxiety and stress, and they were very likely to recommend a class to others.²⁷ Also in 2020, Dr. Block recommended increasing indoor exercises, such as tai chi and qigong, reducing high-touch therapies, and focusing on telehealth during the pandemic.²⁸

Pre-COVID-19 Practice

Levine Cancer Institute is an academic hybrid, multi-site, community-based cancer program. Through the dedication of its staff and the flexibility of staff and patients, the Department of Supportive Oncology, which includes integrative oncology, developed new practices to serve patients with cancer and their families during the COVID-19 pandemic. These new practices aligned with the institution’s approach to best serve patients and their families.²⁹ We hope that insights from our experience may be adapted by other healthcare facilities.

Before COVID-19, our integrative oncology clinic and services were primarily provided in person. Services consisted of groups and classes for patients, care partners, and staff. These included yoga, tai chi, meditation, therapeutic art, and music therapy. Select modalities were also available privately and during chemotherapy infusions. Tangible modalities, such as healing touch, oncology massage, and acupuncture, were delivered in the clinic setting. Acupuncture was provided in a shared appointment, though patients were assessed and treated individually. The integrative consult clinic with physicians and an advanced practice provider offered mostly on-site visits with limited virtual appointments for designated rural areas. Due to COVID-19, all in-person services were suspended on March 16, 2020, and virtual and phone clinic visits began on March 18. On-site individual modalities (i.e., acupuncture, healing touch, oncology massage) restarted on June 1, 2020, with a modified schedule and screening processes in place. To meet the challenges imposed by the pandemic, our integrative oncology team adopted the strategies listed in Table 1, right.

Our Challenges

Though these strategies are beneficial, we experienced many implementation challenges. Virtual visits require time and patience to learn the platform, and technical difficulties due to connectivity or a device (i.e., computer, smartphone, tablet) occur for both clinicians and patients. Clinicians and practitioners must invest time to learn about new technologies, such as publicly broadcasting live music, digital patch cables, and film equipment. At times, audio delays from the music therapist’s equipment can create distractions. During the pandemic, many social interactions moved online and “Zoom fatigue” (e.g., tiredness, anxiety, or worry resulting from overusing virtual videoconferencing platforms)³¹ impacted virtual visits. Though telehealth appointments allow some reading of facial expressions and body language, they are not as effective as in-person visits. Some clinicians prefer in-person appointments and believe that virtual visits hinder rapport building and the therapeutic patient-provider relationship, which has traditionally been built in person and can influence the clinical response to prescribed interventions. Even when no treatment plan is needed, a clinician’s careful listening, examination, and reassurance about the normalcy of common symptoms and experiences can decrease patients’ stress.³²

Certain virtual connections can feel more natural and genuine, based on both parties’ familiarity with technology.³³ Yet that same

(Continued on page 30)

Table 1. Evolving Strategies for Integrative Oncology During COVID-19

Strategy	Description
1. Telemedicine and individual therapeutic visits	Virtual integrative clinic visits with physicians and an advanced practice provider are accessible through a secure, Health Insurance Portability and Accountability Act-compliant online portal or by telephone. North Carolina medical licensees are permitted to practice in both North and South Carolina during the COVID-19 public health emergency. ³⁰ Individual, virtual music therapy is available for inpatients undergoing bone marrow transplant and all outpatients.
2. Online resources*	<p>Newly created online recordings of integrative services previously offered in person are distributed to patients, care partners, and staff to view on demand. Online resources are distributed through email lists of previous participants, posted publicly on an online calendar, and shared with community partners. Offerings include:</p> <ul style="list-style-type: none"> • Archived repository of music discussion and music-assisted relaxation livestreams • Chair yoga • Guided self-healing touch • Learn to knit videos • Lymphatic flow exercise class • Music therapist-led meditations • Online care partner massage training program; free for 90 days • SoundCloud-based audio recordings of prayers, reflections, and guided meditations • Stress management tips from an integrative physician • Tai chi in English and Spanish • Therapeutic art with materials found easily at home (e.g., color blending with paint, crayons, or colored pencils and crafting with salt dough) • The art and science of journaling • Qigong
3. Live, interactive virtual groups and classes	<p>Many interactive oncology group and class instructors offer live virtual meetings to maintain social connection among participants. Most classes meet once per week. Offerings include:</p> <ul style="list-style-type: none"> • Chair yoga • Livestreaming music on YouTube, Facebook, and Twitch • Meditation • Music therapy for anxiety and pain management • Therapeutic art • Topical song discussion with live music performance
4. Additional infection prevention	<p>After reopening in-person services (i.e., clinic visits, healing touch, oncology massage, acupuncture), several precautions were implemented in the following sequential order:</p> <ul style="list-style-type: none"> • Visitor restrictions • Screening calls the day before appointments for COVID-19-related symptoms and/or exposure • Patients wait for appointments in their car, when possible • Physical distancing in waiting room (reduced capacity and 6+ feet social distancing between seats) • Temperature checks at entry points • Efficient check-in to minimize waiting room time • Mask requirements for all • Personal protective equipment for staff • Symptom checks during appointments • Immediate isolation and request for diagnostic testing if patient arrives on-site with COVID-19 symptoms • Unidirectional foot traffic flow pattern, so individuals do not cross paths • Publicly available hand sanitizer • Longer appointment time blocks to allow thorough sanitization between patients

* Online resources are presented alphabetically, not by order of importance.

(Continued from page 28)

virtual environment presents limitations, such as lack of hands-on physical examination, which is a fundamental feature of patient-physician encounters.³⁴ The inability to collect lab samples during virtual visits can hinder treatment recommendations (e.g., assessment of vitamin D levels to recommend supplements). Assessing physiologic responses, such as heart and respiratory rates, can also present a challenge to integrative oncology interventions. For clinicians, additional necessary documentation, like notating virtual encounters, patient consent required for virtual visits, and time spent on chart review, can increase clinical burden.

Virtual visits further lack the controlled environment of a clinical setting that has fewer distractions. Some patients do not have the necessary privacy needed for telehealth due to environmental distractions (e.g., children, pets, driving, texting, watching television, etc.). A June 2020 online survey of more than 1,000 American adults revealed that 73 percent of men and 39 percent of women multitask during their telehealth visits, with nearly one-quarter checking email, browsing the internet, or texting. A similar proportion (24.5 percent) watch a movie, the news, or television.³⁵

Some patients prefer in-person visits as a means of human interaction, change of environment, or respite from ongoing social isolation imposed by the pandemic. Though those without personal technology (i.e., internet access, computer, smartphone, tablet) can access virtual visit equipment at a regional Levine site facilitated by a clinical team member, this option can be inconvenient and require additional coordination by clinical staff. Other patients who have attended on-campus groups and classes feel that social support is not as strong virtually as it is in person.

Our Facilitators

Although challenges like the ones listed above were numerous, our experienced facilitators ensured that integrative oncology services continued. Philanthropic funds from the 24 Foundation (24foundation.org) and SherryStrong (sherrystrong.org) supported services, including healing touch, oncology massage, acupuncture, therapeutic art, and music therapy. Patients, clinicians, and practitioners all demonstrated an openness to try new practices and a willingness to embrace uncertainty to achieve growth and maintain quality patient care. Without being given specific directions or requirements, our motivated and adaptable group and class leaders created their own virtual content with home equipment.

Some patients feel more comfortable and better able to manage their symptoms, such as fatigue and nausea, while attending virtual visits, groups, and classes from the safety and privacy of their homes. Virtual options also remove travel challenges for those with limited mobility, lack of transportation, or busy schedules.

Though virtual visits were available to rural residents prior to the COVID-19 pandemic, their use was infrequent. Telehealth appointments now allow patients living in areas inaccessible to regional clinics to experience greater accessibility to services,³⁶

and immuno-compromised patients previously unable to take part in face-to-face events gain social support. During the 2020 public health emergency, our extended integrative oncology offerings and the reduced time commitment for groups and classes improved patient engagement by allowing patients to attend more events and build diverse self-care strategies. Care partners also benefited from on-demand recordings and virtual groups and classes where scheduling and accessibility would have otherwise interfered. Many patients expressed gratitude that our integrative oncology services continued and provided support during this difficult time.

For clinicians, virtual visits improve efficiency by allowing appointments to occur consecutively without travel time and disinfection between patients. Following an initial increase in no-show rates in March 2020 when the pandemic first began, integrative oncology clinic no-show rates improved in 2020 (3 percent average; range of 1.2 percent to 7.4 percent) compared to 2019 (6.9 percent average; range of 2.5 percent to 11.2 percent), likely due to fewer challenges with attending virtual visits. Video connections allow clinicians to see patients in their own environments, which can provide information about others in the home and potential beneficial or missing resources. Though a full assessment of physiological responses to complementary therapies, such as music therapy, is not possible, the therapist or practitioner can monitor visual cues to assess calming responses, like rise and fall of the chest and stomach with inhalations and exhalations. Patient satisfaction and likelihood of recommending the integrative oncology clinic to peers remain high and comparable to pre-pandemic levels.

Benefits and Enduring Changes


Lessons learned during a global crises are opportunities to transform and improve healthcare.¹⁰ The COVID-19 pandemic led to practice adaptations that will continue long after the virus is controlled due to demonstrated benefits. Expanded virtual visits, livestreamed groups and classes, and on-demand recorded integrative practices are examples of this enduring change. Patients with cancer continue to strengthen their self-efficacy by independently engaging in evidence-based practices to reduce symptoms and improve well-being. Virtual offerings also support health equity by mitigating challenges presented by transportation, mobility issues, and distance. Most follow-up visits are now conducted virtually because of increased convenience for patients and the option for care partners to participate, which has the added benefit of social support and better understanding of their care plans.

At Levine Cancer Institute, we will continue to target integrative oncology services at the most clinically appropriate times. For example, a music therapist now connects virtually with patients at home the day after chemotherapy, when symptoms are typically more severe. Before the pandemic, music therapy was offered in person during chemotherapy infusions. This insight about optimal timing of integrative oncology services would not have been discovered without the forced switch to virtual care necessitated by the pandemic. The flexibility demonstrated by clinicians,

practitioners, and administrators ensures that our team is ready to pivot back into restrictions if warranted. These strategies demonstrate our team's determination to provide world-class care to all patients—no matter where they live.

Closing Thoughts

Future research should examine utilization of each integrative oncology service offering, patient and care partner preferences for virtual versus in-person services, and health outcomes, including symptoms (e.g., anxiety, pain, fatigue), after virtual versus in-person services. Though COVID-19 is perhaps the largest public health crisis of our lifetimes, it has resulted in healthcare delivery improvements for patients and providers that likely would not have occurred otherwise. We are hopeful that the integrative oncology strategies implemented at our institution

will be adapted by other healthcare settings to improve symptoms and quality of life of patients with cancer. 

Danielle Gentile, PhD, is scientist, Real-World Evidence and Insights, Cardinal Health Specialty Solutions. Work completed at Levine Cancer Institute; Susan Yaguda, MSN, RN, is the manager of integrative oncology; Dean Quick, MT-BC, is a board-certified music therapist and music therapy internship director; Rebecca Greiner, PhD, PA-C, is an advanced practice provider; Shamille Hariharan, MD, MPH, is a physician; and Chasse Bailey-Dorton, MD, MSPH, is Chief, Integrative Oncology, The Department of Supportive Oncology, at Atrium Health, Levine Cancer Institute, Charlotte, N.C.

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The ACCC Adoption and Expansion of Telehealth Solutions Initiative

Sustaining care delivery during the COVID-19 pandemic required the oncology community to quickly adopt and expand telehealth services, demonstrating how telemedicine can help expand access to care to traditionally underserved groups and under-resourced suburban and rural areas. This educational initiative addresses the immediate and ongoing needs of cancer programs and practices that want to implement, integrate, and expand their telehealth services to optimize patient care during and beyond public health emergencies. It aims to educate members of the multidisciplinary cancer care team about how to optimize their use of telehealth by providing the resources, tools, and information they need to keep telehealth an essential component of quality cancer care. The Adoption and Expansion of Telehealth Solutions initiative is comprised of five integrated programs:

1. **Rapid Response.** Tells the story of how cancer programs and practices successfully integrated and expanded telehealth solutions during the public health emergency.
2. **State of Affairs (Policy).** Provides information on advocacy efforts and key policy issues regarding coverage and reimbursement for telehealth services, as well as changing federal and state regulations.
3. **Telehealth Team.** Discusses the telehealth roles of multidisciplinary cancer care team members.
4. **PluggedIN.** Addresses the importance of a strong information technology (IT) foundation for telemedicine and integration of the IT professional on the multidisciplinary cancer care team.
5. **Blueprint.** Offers a repository of resources on optimizing telehealth from workflow, operational, economic, and policy perspectives.

Among the resources developed for this education initiative is the video podcast “The IT Professional as a Multidisciplinary Team Member” as featured on Cancer Buzz TV, Ep 03, where Brian Dunn, a unified communications engineer for tele-oncology at University of Virginia Health, the Karen S. Rheuban Center for Telehealth, telehealth operations, discusses the role of the IT professional in quality, patient-centered cancer care delivery and what lies ahead.

The Adoption & Expansion of Telehealth Solutions initiative is supported by Lilly and Amgen. Learn more at acc-cancer.org/telehealth-solutions.

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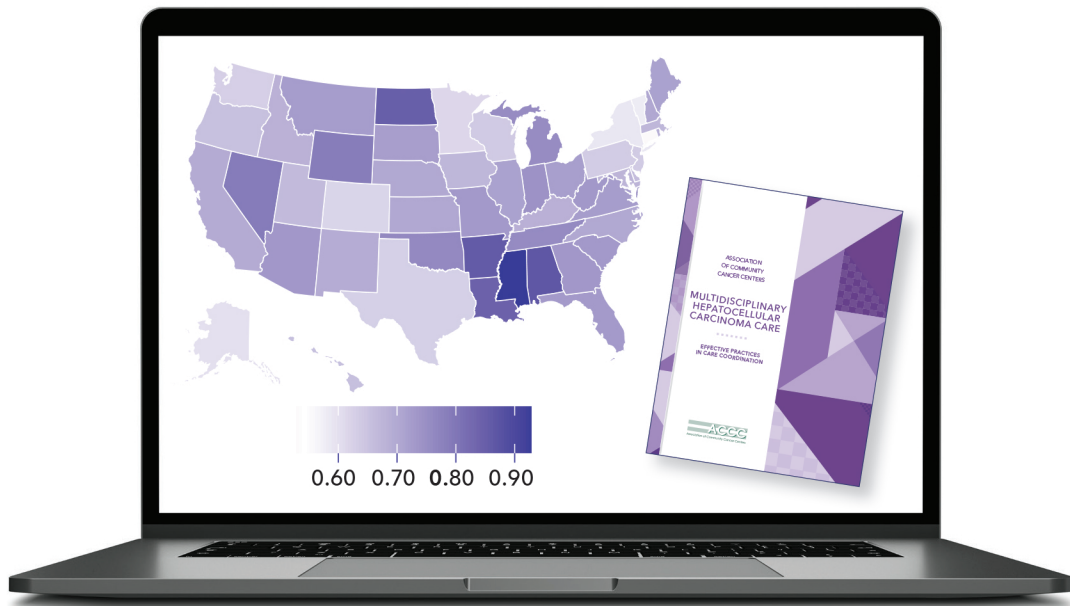
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Real-World Lessons from COVID-19: Driving Oncology Care Forward

Spotlight on the Sutter Health Institute for Advancing Health Equity

As equilibrium is regained, one strategy for moving forward from times of terrible hardship and uncertainty is to take stock of possibilities for growth from the difficulties experienced. The 2021-2022 ACCC President's Theme selected by Krista Nelson, MSW, LCSW, OSW-C, FAOSW, encourages cancer programs and practices to lean in to three key lessons from the COVID-19 pandemic:

1. Health equity and social justice are critical drivers of quality cancer care, and practice-based solutions are needed that reduce barriers and improve health outcomes.
2. The escalating need for high-reach, high-impact psychosocial and supportive care services requires innovative care delivery models that demonstrate measurable value to the oncology ecosystem.
3. Strengthening a culture that supports professional well-being and resilience is essential to practice sustainability and provider and patient satisfaction.

The first lesson recognizes the correlative relationship between health equity and quality cancer care. Advancing health equity is not the purview of the healthcare sector alone, however. A consensus report from The Robert Wood Johnson Foundation

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Lessons from the COVID-19 pandemic and from healthcare organizations actively engaged in assessing care delivery through the lens of health equity can serve as guideposts for the oncology community on the path to making cancer care more equitable.

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explains: “Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health, such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.”¹

Recent events coupled with the realities laid bare during the COVID-19 public health emergency have brought the intersectionality of health equity and social justice to national attention. Racial and ethnic minority populations in the United States not only faced a greater burden from SARS-CoV-2 and the COVID-19 pandemic but also endured racial targeting, hate crimes, and lethal violence. With the consequences of racism and health inequities in the national spotlight, awareness elevated, and calls for action amplified, across the country and the healthcare enterprise the need for systems change to address health equity is acknowledged.²⁻⁷

The overarching question is how to effect change. The U.S. healthcare system is famously complicated, and systems change is notoriously complex.

Structural racism and inequities, explicit and implicit bias, social determinants of health, bias against ethnic and other minority groups all contribute to lack of health equity in the United States. Lessons from the COVID-19 pandemic and from healthcare organizations actively engaged in assessing care delivery through the lens of health equity can serve as guideposts for the oncology community on the path to making cancer care more equitable.

This article explores how an integrated health system in California, serving a diverse patient population, is working to embed health equity in its culture and its mission.

The Sutter Health Institute for Advancing Health Equity

Sutter Health, headquartered in Sacramento, Calif., ranks 33 on the Becker's Hospital Review 2020 list of the 100 largest hospitals and health systems in America.⁸ An integrated health system, Sutter Health serves more than 3.5 million Californians.⁹ The network includes 23 hospitals, 33 ambulatory surgery centers, 8 cardiac centers, 9 cancer centers, 4 acute rehabilitation centers, 6 mental health and addiction centers, 5 trauma centers, and 4,167 licensed general acute care beds.² According to the Sutter Health website, the network is "...committed to ensuring healthcare is accessible and inclusive to all by offering comprehensive services and quality health programs tailored to the diverse communities we serve."⁹ Sutter states that its hospitals "...serve more of the Medi-Cal patient population in Northern California than any other health system."⁹

Kristen M.J. Azar, RN, MSN/MPH, FAHA, is scientific medical director at the Sutter Health Institute for Advancing Health Equity and a research scientist at the Sutter Health Center for Health Systems Research.

Kristen arrived at Sutter Health 12 years ago to conduct research with a focus on health disparities and inequity in the primary care area; for example, diabetes, heart disease, and mental health. She credits Sutter's former chief medical officer and founding director of Sutter's Institute for Advancing Health Equity Stephen Lockhart, MD, PhD, as the physician champion with the vision to pull together the equity work underway at various

local Sutter-affiliate institutions "in a more integrated, strategic way at the health-system level and to think about how we could really leverage the power of this system to look at health equity in ways that can start to make change at a broader level, learning from the great work that was being done in the field and in our clinics."

The launch of the Sutter Health Institute for Advancing Health Equity in December 2020 was a natural evolution of this work, Azar said. "I think what's different about this institute—and what has made it very promising so far—is that we have a structure that is very innovative. We have an internal advisory committee that includes our top leaders from throughout the system—for example, population health, quality, research, digital health, community health, our ops teams—all the groups within our system that need and want to not only incorporate but integrate an equity perspective."

This is no small task for a health system serving a patient population that is 54 percent ethnically diverse and speaks more than 134 languages.

"It's been a process. It's very complicated trying to understand who needs to be involved and which stakeholders we need to include to ensure anything we do is going to be feasible, impactful, and sustainable," said Azar. Plus, Sutter Health has a strong commitment to make care better "not just for our patients but also for our local communities."

Prioritizing Data Collection

A critical first step for assessment of equitable care was assessing the health system's data. "It is a huge priority for us. Without an idea of current state in terms of existing inequities, we're flying blind," Azar said. The focus to date has been on data around racial and ethnic disparities. More than a decade ago, Sutter launched a systemwide initiative to standardize collection of self-reported race, ethnicity, ancestry, and language data. "We have very good capture of these data," Azar said. "We know that race and ethnicity can serve as markers for societal inequalities and structural racism resulting in health inequities."

A key part of empowering research through the Sutter Health Institute for Advancing Health Equity is exploring how to increase the robustness of the health network's data assets. The current emphasis is on data around social determinants of health, Azar said. Several pilot studies are underway looking at how best to collect these data. "We have the fields in our health record, so in terms of being able to enter the data, the health system is ready." But the pre-work—creating processes to ensure standardization of the data collection and entry so that the end result is quality data that can be used and interpreted with confidence—is critical. "We are actively looking at this, along with our population health department, led by our chief population health officer Chris Stanley, MD, and our chief research and health equity officer Leon Clark, MBA," said Azar. "Having our population health group leading the charge to obtain social determinants of health patient data has been really great."

At present, the process is a stepwise approach to expanding data collection that allows for careful consideration on how best to elicit information related to social determinants of health. “There are many aspects to the process,” Azar said. “How do we ask these questions in a way that’s sensitive to our patients? How do we do it in a way that physicians feel like they have what they need to address any concerns that arise? Is it different in an ambulatory setting versus an inpatient setting? Do we ask everyone or only those we have reason to believe are at higher risk? There are a lot of nuances.”

Developing the Health Equity Index

Once organizations have the data, the next step is figuring out how to create metrics to measure and improve equity in healthcare. Dr. Lockhart, now retired, was a leader and co-developer of Sutter’s Health Equity Index. The index uses analytics and dynamic applications of clinical and population data to measure outcomes of care among different patient populations. Sutter researchers designed and implemented the Health Equity Index, which is calculated as the ratio of observed to expected encounters, to identify and quantify health inequalities in healthcare systems. The index is designed to measure health equity in several ambulatory care-sensitive conditions (e.g., asthma, diabetes). Alice Pressman, PhD, MS, scientific research director of the Institute for Advancing Health Equity and co-developer of Sutter’s Health Equity Index, and colleagues, writing in an article published in *Health Equity*, explained: “To our knowledge, this is the first attempt to develop and implement a metric for measuring health equity that uses not only real-time, health system data, but also combines it with external demographic, prevalence, and utilization statistics to compute values that reflect equity of outcomes specific to each racial or ethnic group studied.”¹⁰


The authors stated that the Health Equity Index is designed to be “portable to any healthcare system.”¹⁰ To use the index, health systems need to have the following: encounter diagnoses, geographical data, age, sex, and race/ethnicity; access to local census tract data; and access to local-level prevalence data. According to the authors, with access to available prevalence data, the Health Equity Index is adaptable to any health condition. Sutter Health makes the index available to other healthcare providers to encourage collaboration and increase awareness of the need to develop processes and methods for assessing progress in advancing health equity. (The full text of the article by Pressman et al. is available at: [liebertpub.com/doi/10.1089/heq.2018.0092](https://doi.org/10.1089/heq.2018.0092).) Pressman, Lockhart, and Azar have continued their work in quantifying health equity and have recently published work describing the novel COVID-19 Vaccine Equity Index, a metric that has been used to set equity targets within Sutter to guide vaccine distribution efforts (also in *Health Equity* at: [liebertpub.com/doi/full/10.1089/heq.2021.0047](https://doi.org/10.1089/heq.2021.0047)).¹¹

Quality Team Engagement

At Sutter Health, a recent successful intervention conducted with an equity focus was “The Vital Few” initiative developed during the COVID-19 pandemic. The public health emergency’s impact

on cancer screening rates and on the potential for screening delays to lead to more late-stage cancer diagnoses has been a concern across the oncology community.¹²⁻¹⁵ Early in the pandemic, the Sutter Health Quality Team began looking at the types of preventive services most likely to be affected by pandemic-related restrictions, including screenings for breast cancer, colorectal cancer, and cervical cancer, with special attention to health equity. With health precautions in place, one component of “The Vital Few” initiative, under the leadership of William Isenberg, MD, PhD, chief quality and safety officer, and Paul Costello, MEng, director of ambulatory quality and patient safety, along with the entire Sutter Health Quality Team, quality medical directors, and many clinicians, non-clinicians, and leaders, focused on identifying and reaching out to African American and Hispanic patients. Through this work, the team was able to identify and close gaps in screening for these racial/ethnic patient subgroups.

Acknowledging Implicit Bias

Although multiple studies have shown the impact of implicit bias in healthcare and cancer care, how best to create awareness and to mitigate the effects of unconscious biases at the system, department, and individual level are topics of debate. Sutter Health has partnered with Impact4Health to design and implement training on inclusive leadership, health equity, and implicit bias. (See interview on page 39 for more.) Creating buy-in from staff across all levels of the health system is an ongoing process, Azar said. Though many physician leaders are on board with implicit bias training, logistics can be a barrier, as can the size of the health network, which includes both employed and contracted physician groups. Work is underway in partnership with Sutter Health University to find ways to provide some content on demand. The Institute for Advancing Health Equity is also interested in developing ways to augment the more traditional training formats with some experiential components, such as virtual reality or gamification, Azar said. Another consideration is how to create a learning environment in which there are opportunities to observe difficult conversations with patients through a series of case studies. “It’s the idea of not having that one-time training but how do we give people the space to really engage with what they’re being taught,” Azar said. “The second piece of that is evaluation, long-term monitoring, and understanding—does this actually change behavior? This is something that is really important for us as well. The field really has a lot of room to grow in those areas, so I’m excited that we are on this journey with so many other wonderful health systems, and researchers, and scientists who are really trying to move this forward.” 

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A Q&A with Dr. Maria Hernandez, President and COO, Impact4Health

Oncology Issues recently interviewed Maria Hernandez, PhD, president and chief operating officer of Impact4Health. Dr. Hernandez is a thought leader in health equity and pay-for-success initiatives designed to address upstream social determinants of health among vulnerable populations. She has led diversity and inclusion initiatives and executive education trainings aimed at creating a culture of inclusion for Sutter Health. Impact4Health provides trainings in areas like inclusive leadership, unconscious bias, mitigation of unconscious bias, and health equity.

OI. How did you first become involved in this work?

Dr. Hernandez. It came from a personal experience in my family. I had been working in diversity, equity, and inclusion in the corporate sector, and I had done training with executives around inclusion and diversity.

Then my dad, we're sitting with him—during his first battle with cancer—as he is getting prepared for surgery. My brothers, my mom, and me, and we're speaking Spanish to him. All of a sudden, he puts up his hand and says stop, don't speak Spanish. They are going to think I'm stupid, and they're not going to help me. And I was floored and saddened by that comment.

I took the moment then to really look at what health inequities were all about, and I thought what I had just witnessed is an example of where health inequity begins. It can begin just by the perception of a patient that they are not welcome, or that they don't fit in, or that they might not be treated well. You can imagine how frightening that would be for a patient. And my dad was not in a position where there wasn't anyone there to advocate for him. On the contrary, he had me and he had my brothers, one of whom is a physician. So, I really took that moment to heart.

That was almost 10 years ago. [My involvement] also comes from the data that we know has been around for almost 100 years or more; there are inequities, and we need to do something about it and not just study it—actually get in there and do something.

My initial work at Sutter was to facilitate training for leaders on inclusive leadership. I developed the in-person and online training around inclusive leadership, around unconscious bias, and how to mitigate the impact of unconscious bias in patient care. That last piece was done in concert with Dr. Stephen Lockhart, the former chief medical officer. Dr. Lockhart is someone who really began the formative work at Sutter for its Institute for Advancing Health Equity.

The program we worked on focused on understanding what unconscious bias is, the different ways it shows up in a clinical



Dr. Maria Hernandez

encounter, and what can be done to mitigate it. We developed an internal mental heuristic about what anybody should do as they encounter someone who is different from them. We actually piloted this at the Physicians' Symposium in 2019.

OI. Were case studies a part of this program?

Dr. Hernandez. Yes—for example, a person coming to the hospital with pain or to give birth or a child that might have an ear infection. The case studies were designed to spark a conversation about bias in areas of clinical practice where known inequities exist.

And we introduced everyone to the **Three Rs: Recognize, Review, Replace**. **Recognize** the ability to form a bias or a stereotype. **Review** the individual context to seek to understand what is going on. And then, **Replace** those stereotyped assumptions or biased assumptions with new and more accurate perspectives.

The Three Rs are a quick internal process check—one of our participants called it a “time out”—for physicians, nurses, or other members of the care team. When they encounter someone from a different background than their own (a patient or even a colleague), the Three Rs are a way to think through: *Am I being biased? Am I in some way making an assumption about this person that is going to influence what I am going to do?* And then, *what can I do with the new information that I get by slowing down and really asking key questions to understand what the patient may need?* That has been really powerful.

OI. Were these workshops on inclusive leadership and unconscious bias conducted in person?

Dr. Hernandez. The first courses, going back to 2017 and 2018, were in person. Then we designed some online courses. The physician courses were held during the Physician Symposium, and then COVID-19 hit. So, we've actually been doing physician training live and virtually.

Sutter is so committed to this work. The fact that physicians have been able to come to a Zoom class, that we've been able to make this possible for them has been wonderful. I think it's an example of what you can do when you really want to do something. You don't let the training mechanism be an obstacle. It's been terrific, and we get wonderful participation, great conversations, and a lot of insight.

The fact is every person on the planet has unconscious bias. It's just how the human brain is wired. There is so much that people assume in those first few seconds of meeting a person. And physicians are human, and they do it, too. To have that honest conversation with people who are really committed to caring for all and taking care of all—it's very powerful. I think Sutter is an example of a system that is really trying to do it right. And there's more work to be done, but this is a starting point.

OI. How is Sutter Health able to get physician buy-in for this training?

Dr. Hernandez. It's part of the culture within Sutter to continuously develop staff and physicians and, I think, it is also the commitment to health equity. Another way that we've [gotten buy-in] is by making it easy for people to participate. Sometimes we hold the class at 7 o'clock in the morning before the workday begins. Sometimes it's at the end of the day. The fact that you can watch the class online. You could have it on your tablet or even your phone. I think having all of those options has really facilitated this [training]. But I believe that the bottom line is that physicians want to provide the best care possible, and they recognize in today's conversation about what has happened in this country with the pandemic and the revelation of the inequities that exist—I think they are very concerned. They want to do the right thing. This is an opportunity to empower them, to inform them, and to make it safe to talk about unconscious bias.

That's the other piece behind any of this work, making sure you create a safe environment for staff to talk about something that has been so polarizing in our country. We always say: *Everybody has unconscious bias*. In fact, there are about 100 different kinds of unconscious bias that humans can exhibit. One that we know already exists in healthcare is confirmation bias. The first diagnosis that is made is sometimes the filter through which every other piece of information then gets assigned to the diagnosis. That's why a second opinion is so important. So, if we know that kind of bias already can happen, how can we communicate the fact that unconscious bias about race, about gender, about ethnicity happens? It's important to make it safe to talk about.


OI. In your opinion, what will it take to move the needle on health equity?

Dr. Hernandez. Up until about a year ago, I used to say we need to look at healthcare with the lens of equity, and then I read this great essay online. The writer's point was looking at things through the "lens of equity" feels very temporary—like you put on your glasses and you take them off—when what we need is to have Lasik surgery for equity.

That's the way I say it now. I think equity needs to be embedded in your strategy throughout the entire organization. Whenever we talk about new programs for patients, or new procedures for how we deal with certain issues, each time we have to ask: What is our equity strategy for that new program or protocol? Everybody has to have equity as part of their job description. So, some of the work that we do when we talk about a strategy for health equity is to say exactly that. The only way we're going to achieve this [equity] is if it's something we consider as part of the organization's DNA. That's a lot of work. I want to caution that. Don't think of this is something you can say we're finished with. It [health equity] needs to be something that you constantly look at and look for opportunities to improve.

OI. What is one thing that smaller hospitals and cancer programs could do to advance equity?

Dr. Hernandez. That's a tough one. I know that many are looking for that silver bullet. My suggestion is start by looking at what your patients are saying. What do they say about your services? What do they say about their care experience? Invite them to the table for that conversation. You get a wealth of information about how you're doing with those vulnerable populations when you ask them: *What is it like getting care here? What have you encountered? Do you feel like you are welcome? Do you feel like your doctor understood you? Do you feel like you were heard?* Those conversations are, I think, really critical to get started with whatever program or policy changes you may need to make.

We're super busy. I know that it's hard to do. But if I ask organizations: "What do your patients say about how things are going here?" sometimes you get a blanket answer: "Well, our HCAP [Hospital Consumer Assessment of Healthcare Providers and Systems] scores are great." My second question is: "Do you break down those HCAP scores by race, ethnicity, gender, generation?" The answer is sometimes a blank stare. It goes back to that maxim: "If it isn't being measured, it's not being managed." You have to go one step beyond that: Are you looking for that data that will give you an answer about health equity? 

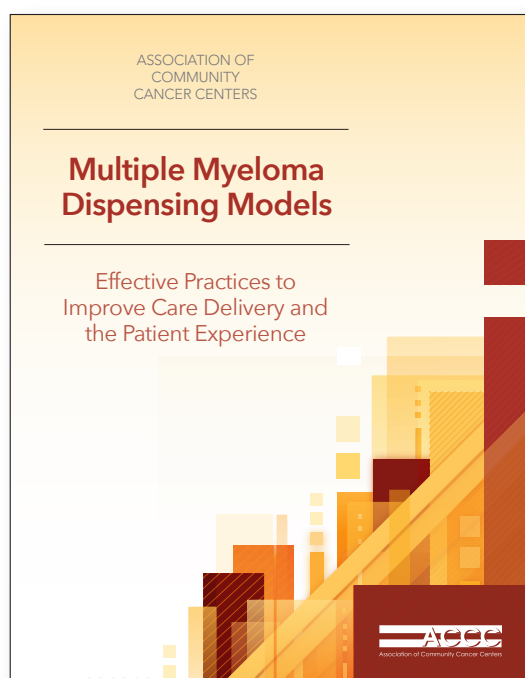
For more information, visit www.impact4health.com or contact Dr. Hernandez at maria@impact4health.com.

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Implementing a Hematology-Oncology Nurse Practitioner Fellowship



Across the United States there is a growing need for specialty providers who can care for an increasingly aging population, especially in oncology. At the same time, there is currently an increased demand for oncology services in the outpatient setting, including in long-term survivorship care.¹ Using nurse practitioners (NPs) to meet these needs can demonstrate improved patient satisfaction and treatment compliance, yielding fewer hospital admissions, as well as decreased lengths of hospital stays and readmission rates overall.² Nurse practitioners are well equipped to bridge this gap in cancer care and can improve patient outcomes by providing comprehensive, high-quality oncology and hematology care that is also cost effective.³⁻⁵ To optimally meet this demand for complex cancer care services, additional training and education must be provided to NPs.⁵

The Nurse Practitioner's Role at Vanderbilt-Ingram Cancer Center

Within Vanderbilt-Ingram Cancer Center at Vanderbilt University Medical Center in Nashville, Tenn., we employ a multitude of advanced practice providers (e.g., NPs and physician assistants) who care for our patients with cancer. Each cancer specialty within hematology and oncology includes physician and advanced practice teams who work in a multidisciplinary model of care. Depending on the specialty service, NPs care for a subset of

Upon completion of the NP fellowship, leaders collaborate with candidates to consider provider positions within Vanderbilt-Ingram Cancer Center. Factors considered in this review include professional feedback from fellowship coordinators, preceptors, and advanced practice leadership.

identified patients. For example, in the outpatient breast surgical oncology department, NPs perform initial consultations to ensure that appropriate imaging, diagnostics, and coordination of services (i.e., chemotherapy, radiation, etc.) are performed prior to patients' surgeries. In our solid tumor oncology and hematology practices, an NP oversees follow-up care and accommodates acute-care visits throughout the week. Across the institution, NPs assist nursing team members with their research needs and any patient messages sent through digital channels, such as MyChart.

Development of the Hematology-Oncology Nurse Practitioner Fellowship

Development of the Vanderbilt-Ingram Cancer Center NP fellowship model was guided by the principles of transitions theory to ensure successful acclimation into proficient hematology and oncology providers.^{6,7} The NP fellowship was proposed by experienced oncology nurse practitioners who are often responsible for onboarding newly graduated advanced practice nurses. These highly specialized NPs approached administrative leaders with the idea of creating a hematology/oncology NP fellowship to deliver specialized oncology training and ensure successful transition into practice. Upon completion of the NP fellowship, leaders collaborate with candidates to consider provider positions within Vanderbilt-Ingram Cancer Center. Factors considered in this review include professional feedback from fellowship coordinators, preceptors, and advanced practice leadership.

NP Fellowship Design

NP fellows are recruited to the program via a job posting, which lists criteria for application, on the Vanderbilt University Medical Center's career website. Additionally, current NPs and nursing leaders advertise the fellowship recruitment period throughout the institution. Applications are reviewed by advanced practice leadership and fellowship coordinators, who select candidates for stakeholder interviews. The fellowship program was developed in alignment with the American Nurses Credentialing Center criteria for certification of an NP fellowship program.⁸ Over a one-year period, NP fellows participate in essential program components, including:

- An advanced hematology and oncology curriculum
- 1,500-hour clinical immersion
- Professional and collaborative role development with a coordinator
- Evidence application to improve patient outcomes
- Scholarly exploration and dissemination of their work.

A doctoral, nurse practitioner, fellowship coordinator conducts direct oversight of the NP fellows. Additionally, the NP fellowship director oversees all fellows within Vanderbilt University Medical Center. Benchmarks for assessment include:

- Increased self-confidence and perceived self-competence
- Preceptor evaluations throughout each clinical rotation
- Participation in professional development opportunities
- Completion of the assigned advanced practice hematology and oncology curriculum.

NP Fellowship Outcomes

Within a two-month period, a total of 33 qualified NPs from across the United States applied for the Vanderbilt hematology/oncology NP fellowship program. The fellowship coordinators conducted a thorough review of applications and completed initial screening interviews. Selected candidates then underwent final interviews with key stakeholders.

Fellowship leaders interviewed a total of five NPs, which resulted in two extended offers for a fellowship position. After

completing the 12-month hematology/oncology fellowship program, both providers demonstrated improved self-confidence and were deemed proficient in practice across multiple cancer specialties by their advanced practice preceptors. Each NP successfully obtained permanent positions within inpatient and outpatient hematology/oncology practices, including the Vanderbilt-Ingram Cancer Center, as well as other academic settings.

Final Thoughts

Establishing a nurse practitioner fellowship requires professional collaboration among expert NPs and institutional leaders to ensure optimal implementation and evaluation of the program. Within hematology and oncology at Vanderbilt-Ingram Cancer Center, the NP fellowship successfully transitioned qualifying providers into highly complex and specialized practice. The established curriculum ensured effective preparation, which resulted in advanced knowledge and clinical competency and improved provider self-confidence and perceived self-competence.



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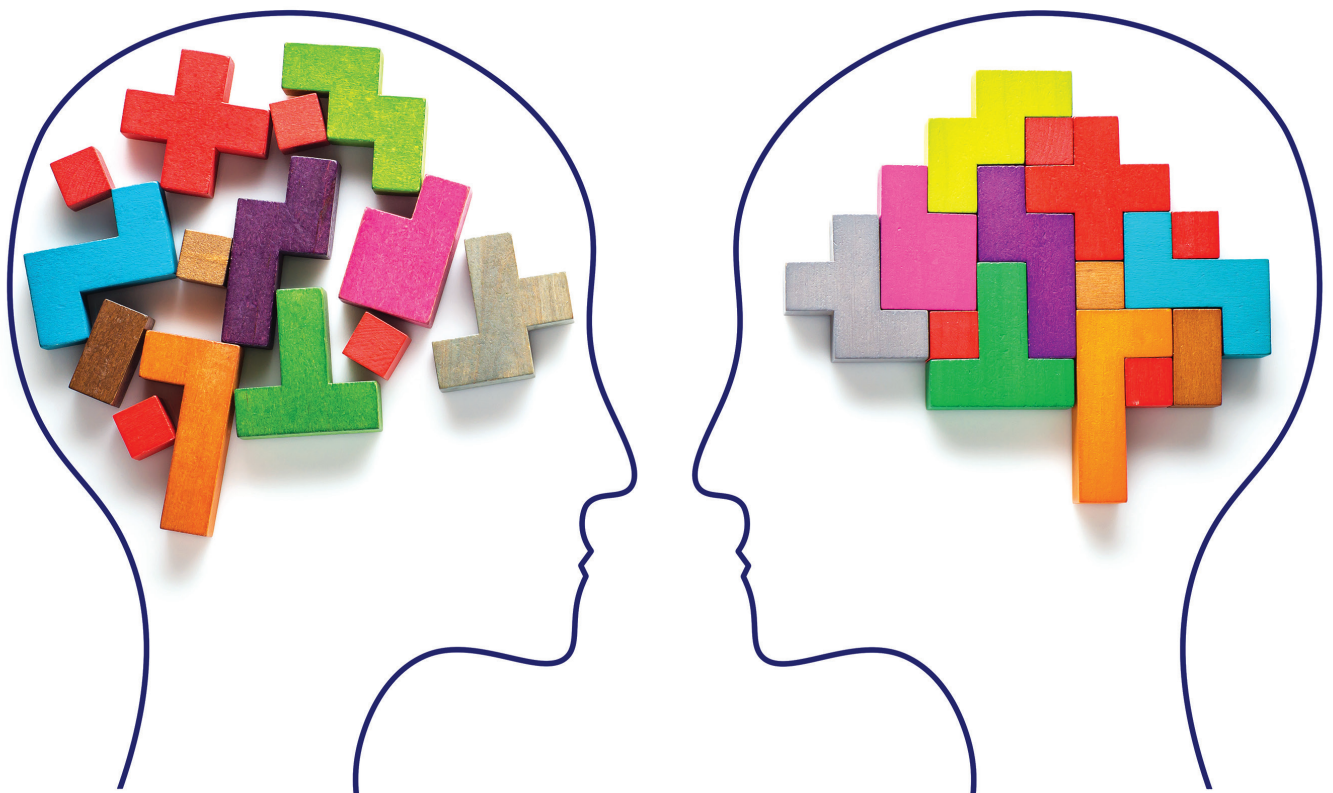


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An Oncology Nurse Residency Program Improves Knowledge of Delirium in Older Patients with Cancer



Patients with cancer may experience delirium during their treatment journey, which is why it is critical to identify delirium early on to prevent complications, especially in geriatric populations. Patients commonly experience delirium during an acute hospitalization or in the terminal stages of cancer.¹ Iatrogenic delirium can complicate hospital stays for more than 2.6 million older persons because it increases fall risk, restraint use, hospital length of stay, and post-acute placement and costs.² Most added post-acute hospital costs are usually due to an increased need for institutionalization, rehabilitation, and home care, which can range from \$16,303 to \$64,421 per patient.³ Within the past two years, 19 percent to 28 percent of patients discharged from Moffitt Cancer Center in Tampa, Fla., experienced at least one episode of delirium during their hospitalization period.

Based on these data, providers must be able to assess for and identify delirium early and intervene appropriately to reduce and prevent delirium-associated complications.^{4,5} Accordingly, Moffitt used interprofessional, patient-centered simulated case scenarios to help nurses enrolled in its oncology nurse residency program develop greater knowledge of delirium. After this education, Moffitt found that the oncology nurse residents who participated in the simulation learning scored higher on the Geriatric Institutional Assessment Profile survey on delirium and dementia knowledge than medical and surgical unit nurses. Knowledge acquisition, as reflected by these test scores, does not always translate into clinical practice; however, simulation can provide application exercises for improving patient outcomes.

Moffitt's Oncology Nurse Residency Program

Moffitt Cancer Center is a National Cancer Institute-designated, Magnet-designated, and Nurses Improving Care for Healthsystem Elders (NICHE) exemplar comprehensive cancer center that

In addition to time spent in the classroom and in simulation, oncology nurse residents meet with their residency group monthly to reflect on their collective experiences and challenges.

provides inpatient and outpatient adult oncology care. Moffitt has 204 designated inpatient beds with a daily census of 160 patients, and patient days average 5,800 hours. Twenty-seven ambulatory units provide 250,000 clinic visits, and approximately 9,500 surgical procedures are done annually. Forty percent of all discharges are for patients over the age of 65.

Moffitt developed its Oncology Nurse Residency Program in February 2013 to facilitate a smooth transition from a novice to a competent clinician and to promote the adoption of oncology as a specialty practice. A goal of this program was to create an environment where newly-licensed nurses could practice safely and accurately. Moffitt understood that a formal residency program could enhance participants' critical thinking and clinical decision-making skills.⁶

Prior to moving into the clinical area to begin unit orientations with preceptors, Moffitt's newly licensed nurses complete a classroom orientation. Face-to-face didactic courses weave case discussions, concept mapping, and group work through the program.⁷ Highlights of the curriculum are displayed in Table 1, page 49.



Nurse residents in the post-operative delirium simulation with the standardized patient.

Residents begin a unit-based orientation that is tailored to their focused population, such as surgical oncology, in which skills and competencies include, but are not limited to, tracheostomy care or chest tube management. Web-based training modules and hands-on practice include chemotherapy and immunotherapy workshops, as well as blood and marrow transplant or interventional radiology procedures. This unit-based orientation is generally completed within 12 to 16 weeks.

For the first 12 months of practice, Moffitt's oncology nurse residents participate in programs outside their unit for one day a month. Oncology nursing is a diverse specialty that collaborates with several interprofessional teams.⁸ Rotating with the respiratory therapist, registered dietitian, or the chaplain assists the novice with integrating evidence-based care into their individual practice.

In addition to time spent in the classroom and in simulation, oncology nurse residents meet with their residency group monthly to reflect on their collective experiences and challenges. This reflective practice leads residents to develop insights and assists in closing the gap between theory and practice.

Simulation is a multi-modal example of the experiential learning model, which creates a safe environment for the learner to

practice and enhance their critical thinking skills while prioritizing the goal of improved patient outcomes.⁹ Clinical simulation promotes communication among participants, development of heightened skills, and the opportunity to practice decision-making in the moment.¹⁰ Learners are more likely to retain content when it is grounded in clinical experience. This experiential learning environment is key to the development of participants' critical thinking, because nurses must be able to put theory into practice.¹¹

A component of NICHE is to provide a platform to offer organizations foundational geriatric education. Understanding the unique needs of older adults with cancer is one area of focus for Moffitt's nurse residents, including education and training on how to take the Geriatric Institutional Assessment Profile. This tool was foundational in the development of the older adults with cancer course curriculum at City of Hope, a comprehensive cancer center,¹² and is discussed below.

The Geriatric Institutional Assessment Profile

This tool is a self-completed survey that was developed in 1999 and revised over time for healthcare team members to assess an intuition's preparedness in implementing a geriatric program.^{13,14} The current version of the Geriatric Institutional Assessment Profile is made up of 133 items, which require about 15 minutes to complete. It assesses the respondent's attitudes regarding care for the older adult, knowledge of guidelines in caring for the older adult, knowledge of best practices for common geriatric issues (i.e., pressure injuries and/or ulcers, medications, sleep, pain, restraints, falls, functional decline, incontinence, dementia, delirium, nutrition, and hydration), and perceived institutional strengths and barriers to best practices in caring for older adults.^{15,16}

In 2014 Moffitt asked nurses and patient care technicians to complete the Geriatric Institutional Assessment Profile and had a response rate of 43.3 percent. As a new NICHE^{17,18} organization, the survey provided important baseline data to prioritize geriatric initiatives.¹⁸ Moffitt repeated the survey in 2016 and had an increased response rate of 79.1 percent. The results of these surveys helped Moffitt identify targeted education priorities in the NICHE program, leading to NICHE exemplar status in 2017.

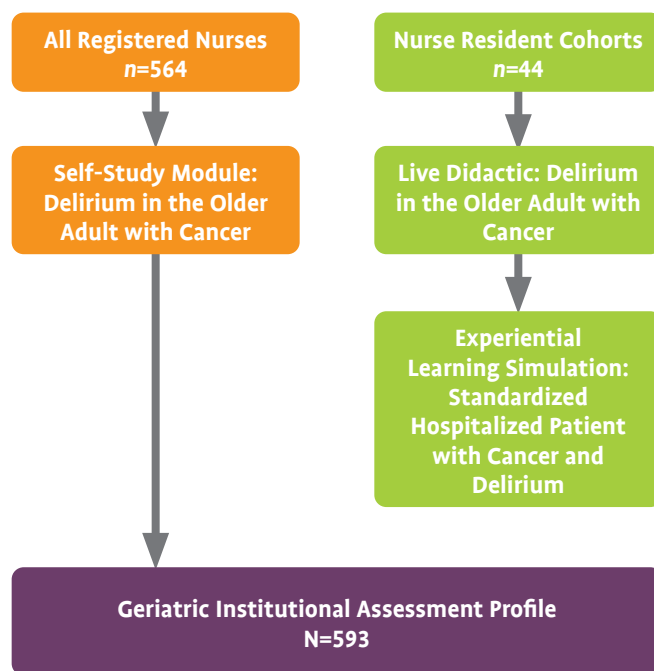
The Geriatric Institutional Assessment Profile includes mentation knowledge assessment practices related to delirium and dementia. In the initial Geriatric Institutional Assessment Profile survey administered in 2014, the baseline mean knowledge scores of Moffitt's registered nurses (RNs) on delirium and dementia were $n = 237$ (5.1). These scores were significantly lower than the average scores when benchmarked against NICHE hospitals throughout the United States of a similar size and teaching status: $n = 4,785$ (5.36). To target this knowledge deficit, the geriatric oncology specialist developed a self-study module on delirium in older patients with cancer and made it a requirement of the mandatory yearly education of all RNs.¹⁹⁻²¹

Traditional learning methods, such as self-study modules, provide content in an asynchronous fashion, which requires the learner to review content and complete a post-test to validate learning. Although this style of learning is a self-directed strategy,

Table 1. Residency Curriculum

Clinical Decision Making & Documentation
Communication & Therapeutic Relationships: Empathy, Health Literacy, and Bias
Ethical Challenges & Evidence-Based Practice
Experiential Learning & Psychomotor Skills: Oncology Topics
Delegation
Prioritization
Self-Care
Problem-Based Learning Simulations: End of Life and Post-Operative Delirium

Figure 1. Delirium Education Process for Registered Nurses Versus Nurse Resident Cohorts



it is less effective when unaccompanied by a second teaching strategy. It has been reported that about 80 percent of content learned in this format is forgotten the next day and 80 percent of any remaining content fades from memory within one month.²²

Moffitt developed a pilot program to compare delirium-related knowledge scores between traditional learning groups and a sample group whose learning was enhanced by delirium clinical simulation (Figure 1, above). Moffitt received support and approval from its nursing leadership and the Nursing Research & Innovation Council to proceed with the pilot program.

Validating the Pilot Program

In 2016 Moffitt piloted the delirium simulation case study in addition to a didactic lecture on a cohort of newly-licensed RNs as a part of the new nurse residency curriculum. This dyad of learning activities was included in the following two cohorts of oncology nurse residents. All three cohorts ($n = 44$) identified themselves as part of their combined cohorts instead of as part of their home nursing unit during the 2016 Geriatric Institutional Assessment Profile reassessment. This allowed Moffitt to directly compare knowledge acquisition and learning activities for those nurse residents who participated in the delirium simulation.

Moffitt developed an inter-professional simulated case study of standardized patients, which required the participation of a primary nurse, provider, respiratory therapist, and a standardized patient who was played by a patient advisor. Before participating, patient volunteers trained in patient- and family-centered care with the goal of compassionate care. This delirium simulation is an enhanced learning scenario and was introduced to oncology nurse residents after a geriatric clinical specialist provided a didactic presentation in which learning objectives ask participants to:²³

- Identify presentations of the subtypes of delirium.

- Review risk factors for the development of delirium in the older adult with cancer.
- Apply interventions to reduce the onset of delirium.
- Describe the initial workup of delirium in a hospitalized patient.
- Use the Confusion Assessment Method for screening of suspected delirium.

The simulation scenario is an 82-year-old male recovering from prostate surgery. The residents are divided into groups of no more than five, who work together to assess, manage care, administer medications, and communicate with providers. A patient advisor (who is a cancer survivor) participates as the standardized patient for this simulation. The patient demonstrates evidence of delirium. Residents use the Confusion Assessment Method, evaluate causal factors for delirium, and notify the provider of their findings. Debriefing allows the patient and residents to identify deficiencies and areas for improvement.

Outcomes

In 2016, 593 cancer care team members completed the Geriatric Institutional Assessment Profile survey, which was benchmarked against 53,291 respondents of all NICHE member hospital staff who completed the survey that year. The sample represented a 79.1 percent response rate—females comprised 79.2 percent of those surveyed. Direct care team members, or frontline patient care providers, surveyed included nurses (54.3 percent of respondents) and nursing assistants (10.79 percent of respondents) with



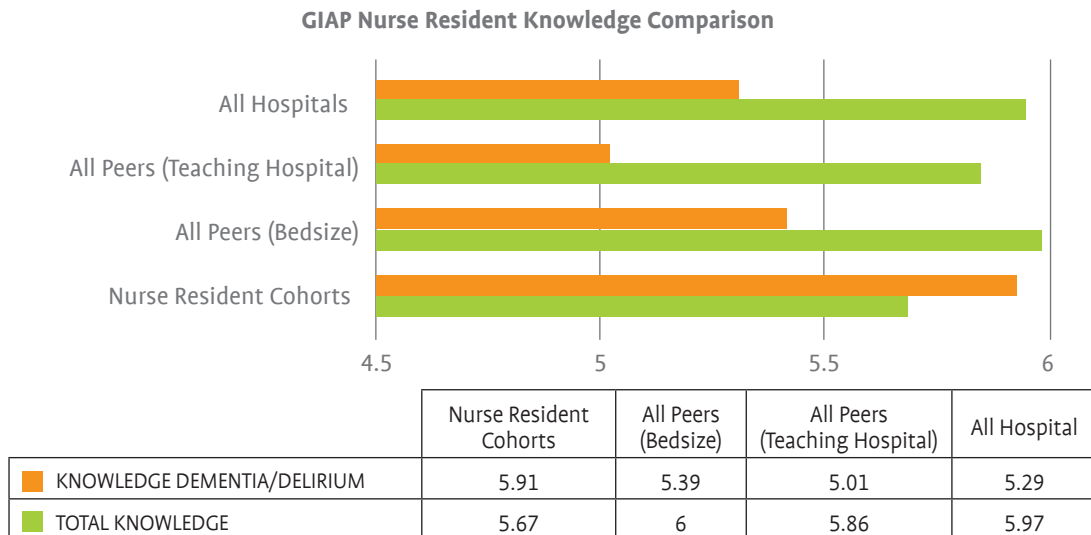
Nurse residents in the post-operative delirium simulation with the standardized patient.

an average of about 15 years in the nursing profession and 6.85 years spent at an educational institution.

Registered nurses were instructed to identify their primary patient care area when completing the Geriatric Institutional Assessment Profile. The nurse residents were directed to classify themselves as an independent cohort and be excluded from their clinical units. This provided Moffitt a separate knowledge comparison of the cohorts who participated in the delirium simulated learning activity. The Geriatric Institutional Assessment Profile dementia and delirium knowledge score of the oncology nurse residents who participated in the simulation (5.91) was significantly higher ($p < 0.05$) than all peer bed size, all peer teaching status, and all hospital comparison groups, as shown in Figure 2, below.

The oncology nurse residents who participated in the simulation learning also scored higher on the Geriatric Institutional Assessment Profile's delirium dementia knowledge than their medical and surgical unit nurse counterparts. Oncology nurse residents who were within one year of graduation may be anticipated to score higher on all knowledge scores compared to experienced nurses who have been removed from the standardized testing practice. There was no significant difference in the average total knowledge scores between medical and surgical nurses. After evaluating the impact of the simulation intervention, higher scores were demonstrated among the overall total oncology nurse residents' knowledge scores in relation to comparison groups. These data show that the simulation learning activity improved delirium scores and not overall knowledge. Peers scored higher than residents on total knowledge, suggesting that simulation learning

Figure 2. Knowledge Scores of Delirium and Dementia



may have impacted the Geriatric Institutional Assessment Profile scores of nurse residents.

Implications for Practice

This project's results are limited to the Moffitt Cancer Center, where the three consecutive cohorts of oncology nurse residents were compared to a baseline of Geriatric Institutional Assessment Profile scores of all inpatient oncology nurses, including oncology nurse residents. Though knowledge acquisition reflected by test scores does not directly translate into clinical practice, simulation learning experiences can improve education of nursing staff, especially those new to oncology, by integrating strategies to increase confidence.²⁴ These types of simulations require time, resources, and labor (both facilitator and nursing staff time); however, broadening the scope of simulation learning experiences to all cancer care team members who provide direct patient care—while using patient outcome measures, such as a deteriorating condition—may provide additional evidence-based education opportunities.²⁵ Improving outcomes related to hospital-acquired delirium may be translated into delirium prevention.²⁶



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An Investigation of Self-Determined Work Motivation Among Young Adult Survivors of Central Nervous System Cancer



With the increase in survivor rates of children diagnosed with cancer, an emerging area of research has focused on understanding the ongoing and lasting impact of cancer on adulthood roles, like employment.^{1,2} In addition to providing an income, meaningful employment is an important predictor of one's quality of life and a catalyst in providing independence, improved self-esteem, and increased self-determination.³ Survivors of childhood cancers face higher rates of unemployment.⁴ In fact, children who have been diagnosed and treated for central nervous system (CNS) tumors experience more drastic unemployment rates.⁵ A meta-analysis conducted by de Boer et al. found that cancer survivors were twice as likely to be unemployed compared to controls. More specifically, survivors of pediatric brain tumors were found to have a five-fold risk compared to other childhood cancer survivor groups.⁵

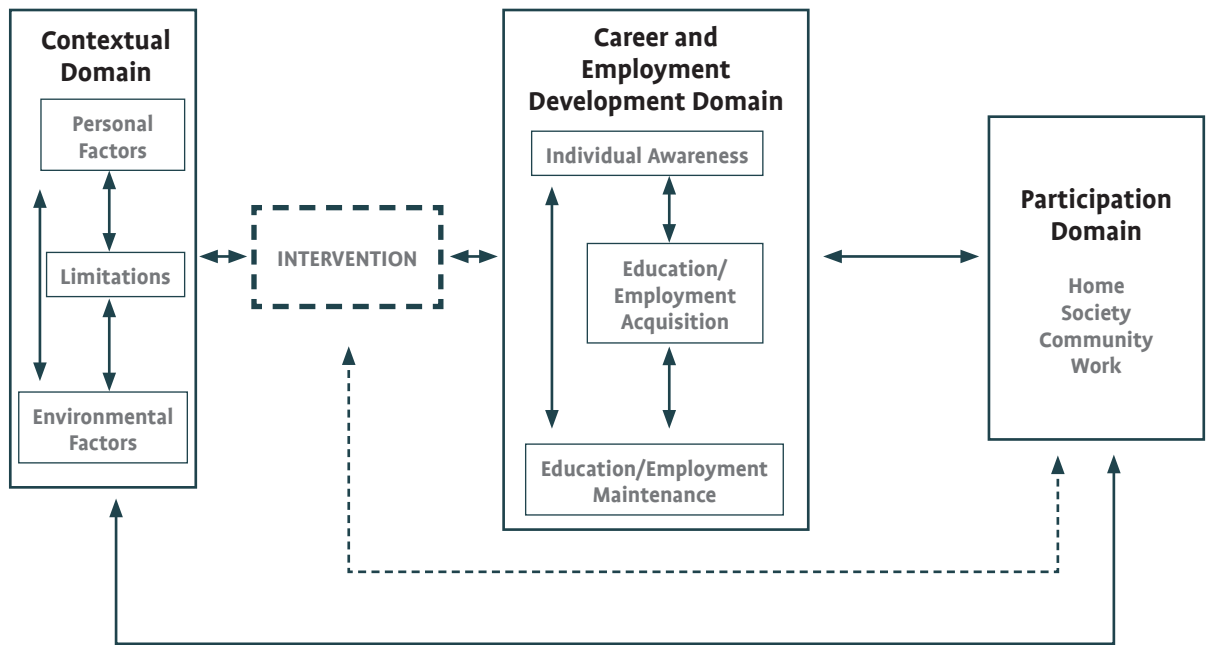
The Illinois Work and Well-Being Model is one model that has been used to understand the factors that relate to career development of young adult survivors of cancer.⁶ The International Classification of Functioning model, a theory based on research regarding the employment of individuals with chronic health conditions, informed the conceptual framework of the model.⁷ The Illinois Work and Well-Being Model is comprised of three major domains—Contextual, Career and Employment Development, and Participation—which have bidirectional relationships that inform outcomes and potential interventions. This model provides a structured framework to conceptualize personal, environmental, and psychological factors that impact the career development of young adult survivors of pediatric CNS tumors and can potentially guide career development and employment research among the cancer population, which can be seen in

Research on chronic health conditions has consistently found that higher levels of career readiness are related to making smarter career and employment decisions with lower levels of psychological distress.²¹

Figure 1, page 54. Using the Illinois Work and Well-Being Model, researchers have begun to identify the relationships among individuals' functional limitations in the context of their personal and environmental factors and the impact on specific areas of career and employment development, such as personal motivation and core self-evaluation.

Vocational psychology and employment research found that increasing one's motivation to work is linked to increased engagement in the labor market and vocational outcomes.^{8,9} The self-determination theory is a multifaceted psychological conceptualization of work motivation that garners insight into an individual by measuring both intrinsic and extrinsic motivation, as well as strength of said motivation. Given that most individuals engage in work at some capacity, a thorough understanding of work motivation is important.¹⁰ Furthermore, because individuals vary in level and orientation of their motivation, it is worthwhile to

Figure 1. Illinois Work and Well-being Model



gain insight into factors, like vocational-psychological factors, that increase motivation. Having a better understanding of these factors can serve as points of intervention to increase career development and employment among young adult survivors of cancer.

Research in occupational development and vocational behavior has found that personal factors, like work personality and core self-evaluation, and the career factor of career readiness, are robust psychological variables that significantly impact the occupational development, vocational behavior, and work participation of individuals with chronic health conditions.¹¹⁻¹⁴ One’s work personality is a personal developmental construct that has been found to play a critical role in establishing the foundation of effective vocational and career behavior in individuals with disabilities and has been linked to meeting the contextual demands of the work environment.¹⁵⁻¹⁷ Individuals with disabilities who have higher levels of developmental work personality were better able to meet contextual demands, such as interpersonal social demands at work, specific work tasks, and adaptations to workplace changes, therefore increasing overall employment outcomes.¹⁶

Core self-evaluation is a personal factor conceptualized as a higher order construct regarding individuals’ primary perceptions and bottom-line evaluations on how they perceive themselves, the world, and others.¹⁸ It has also been found to be related to job performance and satisfaction.¹⁰ Core self-evaluation is comprised of four psychological constructs—self-esteem, generalized

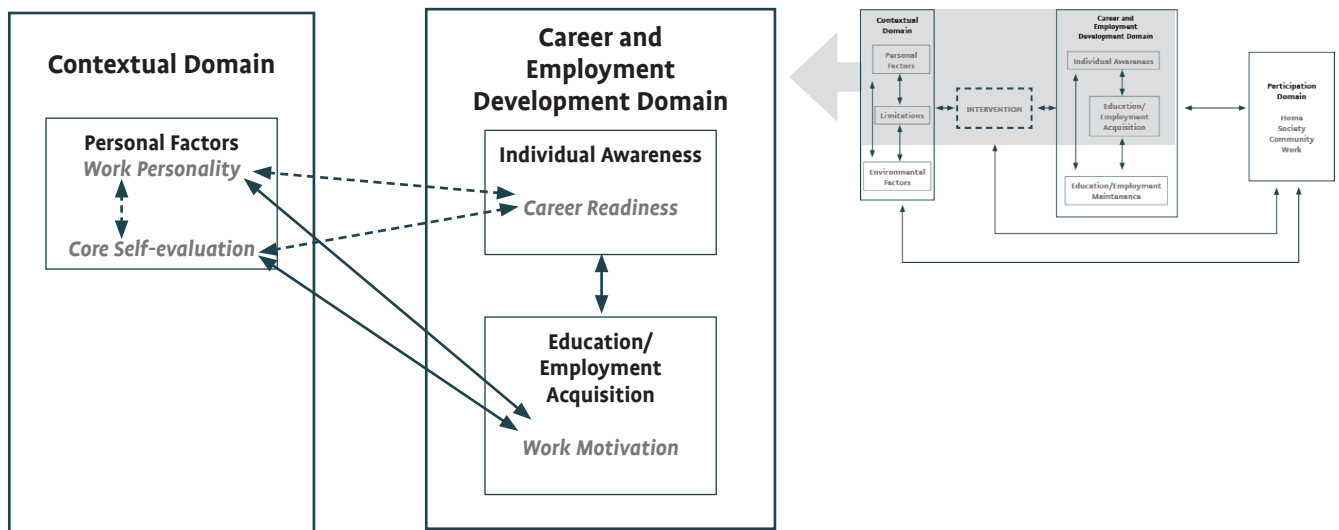
self-efficacy, locus of control, and emotional stability (neuroticism)¹⁹—that act as a higher order factor impacting career and employment outcomes, including, but not limited to, job satisfaction and performance.^{12,14}

Career readiness, which is grounded in the cognitive information processing theory, is a career awareness factor that mediates an individual’s ability to effectively manage cognitive and affective factors related to making impactful career decisions.²⁰ Research on chronic health conditions has consistently found that higher levels of career readiness are related to making smarter career and employment decisions with lower levels of psychological distress.²¹ However, to date, there is limited research conducted on young adult survivors of CNS tumors to examine how these three psychological constructs impact their career development and employment process. No research has examined the relationship of these constructs and work motivation.

The purpose of our study was to apply the Illinois Work and Well-Being Model to an investigation on the impact of career readiness, core self-evaluation, and work personality in individuals’ work motivation (Figure 2, page 55).

An individual’s work personality and overall core self-evaluation can be understood as personal factors in the contextual domain. Career readiness is a measure of one’s awareness within the Career and Employment Development domain. In the context of this study, work motivation is conceptualized as a job acquisition factor within the Career and Employment domain. Given the theoretical framework of the Illinois Work and Well-Being

Figure 2. Hypothesized Relationship of Personal and Career Factors by Domain



Note. The shaded area of the IW2M represents the focus of this study and has been expanded for ease of readability. Solid lines represent the tested pathway regarding the relationship between the psychological variables of interest. Dotted lines represent theoretical and indirect effects between the personal, psychological, and career independent variables.

Model, our study examines the directional relationships among individuals' personal factors, career identity, and work motivation. The following research question guided our study: "Is there a relationship between career readiness, work personality, and core self-evaluation and the work motivation of young adult cancer survivors?"

Defining the Parameters

After obtaining institutional review board approval, we recruited study participants from the Pediatric Brain Tumor Clinic at Dana Farber Cancer Institute, Boston, Mass., where survivors of childhood cancer receive long-term follow-up care. Once we had permission from the respective medical teams to contact patients, we screened potential participants eligibility. To participate in our study, participants must be 18 to 30 years old and have been diagnosed with cancer prior to the age of 18. Additional eligibility criteria included: 1) that participants had not received any cancer therapy within the last two years, 2) that patients were not active patients at a clinic, and 3) that patients spoke English as a primary language. Participants who agreed to participate in the study were then asked to fill out an assessment packet, which included these study instruments:

- A Behavioral Regulation in Work Questionnaire
- A Career Thoughts Inventory Form
- A Revised Development of Work Personality Scale
- A Core Self-Evaluation Scale

- A demographic intake form, which asked participants to provide self-reported data on demographic information, including age, work history, education level, and ethnicity.

We determined that a cross-sectional sample of young adult cancer survivors was best for the study.

Behavioral Regulation in Work Questionnaire

This 19-item measure was developed to assess one's motivation to work based on the self-determination theory. For the purposes of our study, we adapted David Markland and Vanessa Tobin's Behavioral Regulation in Exercise Questionnaire-2 by adjusting the focus from exercise to work.²² Each item is rated on a five-point Likert-style scale that ranges from 1 (*not true for me*) to 5 (*very true for me*). Previously reported reliability estimates for Behavioral Regulation in Work Questionnaire subscales ranged from 0.73 to 0.89, and we found it to be 0.861 for our study.⁹

Career Thoughts Inventory

This 48-item measure has been commonly used in the vocational counseling field to assess individuals' career readiness.²³ Using a four-point rating scale, participants were asked to respond on a scale from 0 (*strongly disagree*) to 3 (*strongly agree*). This standardized measure produces a total score and individual scores on three critical areas of career readiness: decision-making confusion, commitment anxiety, and external conflict. James P. Sampson reported the following ranges of internal consistency

reliability coefficients (Cronbach's alphas) for inventory measures:²³

- Career Thoughts Inventory total between 0.93 and 0.97
- Career Thoughts Inventory-Decision Making Confusion between 0.90 and 0.94
- Career Thoughts Inventory-Commitment Anxiety between 0.79 and 0.91
- Career Thoughts Inventory-External Conflicts between 0.74 and 0.81.

In our study, internal consistency reliability coefficients for Career Thoughts Inventory measures were 0.98 for the total score, 0.97 for Clear Thoughts Inventory-Decision Making Confusion, 0.94 for Clear Thoughts Inventory-Commitment Anxiety, and 0.85 for Clear Thoughts Inventory-External Conflicts. Values of internal consistency were all greater than 0.7, like those found in the original study, providing evidence that the Career Thoughts Inventory is consistent across groups.

Revised Development of Work Personality Scale

This 14-item measure was developed in accordance with Erik Erickson's psychological developmental stage of "Industry vs. Inferiority" and assesses individual behaviors and beliefs. Participants were asked to rate each item using a Likert scale that ranged from 0 (*not at all like me*) to 5 (*very much like me*). The scale has been found to significantly correlate with other measures of work personality and prior studies have provided internal reliability coefficients (Cronbach's alphas) ranging from 0.71 to 0.81.¹⁷ For the purposes of our study, investigators used the Work Tasks subscale of the Revised Development of Work Personality Scale, which had internal reliability of 0.74.

Core Self-Evaluation Scale

This 12-item-scale measures four specific traits—self-esteem, generalized self-efficacy, neuroticism, and locus of control.²⁴ This tool is considered to be a measure of personality traits that can remain stable over time and have been shown to correlate with job satisfaction, job performance, and life satisfaction. Using a five-point Likert scale, participants were asked to respond between 1 (*strongly disagree*) and 5 (*strongly agree*) to show how much each statement represents their experience. A prior study of the Core Self-Evaluation Scale found internal consistency values ranging from 0.81 to 0.87.²⁴ The calculated internal consistency coefficient for our study was 0.94, demonstrating that the scale items are related and performing appropriately among this sample.

Gathering Study Participants

We collected the data set in Table 1, page 57, from the Pediatric Brain Tumor Outcomes Clinic at Dana Farber Cancer Institute where survivors of pediatric brain tumors receive long-term follow-up care. Study participants consisted of 128 young adult survivors of pediatric CNS tumors aged between 18 and 30 years old (the mean age was 23.27 with a standard deviation of 3.39). The age of participants at diagnosis was between newborn and 20 years old (the mean age was 9.50 with a standard deviation

of 4.86). Sixty-six (51.6 percent) of the total 128 participants identified as women. Most participants identified themselves as Caucasian (88.9 percent), with the remaining participants identifying as Hispanic (3.2 percent), Asian or other Pacific Islander (4.0 percent), and African American (3.2 percent). Regarding educational attainment, 23.6 percent of participants had a high school diploma, 5.5 percent had training after high school other than college, 35.4 percent had some college, 30.7 percent had a college degree, and 4.7 percent had a post-graduate degree. In terms of employment status, 35.7 percent of participants were working full time, 23.8 percent were working part time, 11.9 percent were unemployed or currently looking for work, 16.7 percent were unemployed and not currently looking for work, and 6.3 percent were disabled and unable to work.

Among the sample of survivors of brain tumors, the following treatment modalities were performed:

- 40 percent underwent surgery only
- 28 percent underwent surgery, radiation, and chemotherapy
- 15.2 percent underwent surgery and radiation
- 6.4 percent underwent surgery and chemotherapy
- 2.4 percent underwent radiation and chemotherapy
- 3.2 percent only had radiation
- 2.4 percent only had chemotherapy
- 1.6 percent underwent surgery, radiation, chemotherapy, and stem cell transplant
- 0.8 percent received no treatment.

Post-treatment symptoms experienced by participants include vision loss (23.4 percent), hearing loss (17.2 percent), seizures (9.4 percent), endocrine problems (25 percent), growth problems (12.5 percent), headaches (17.2 percent), chronic pain (6.3 percent), depression (22.7 percent), anxiety (45.3 percent), social problems (28.9 percent), learning problems (27.3 percent), stroke (0.8 percent), and diabetes (3.1 percent).

Analyzing the Data

We entered the data from participants' completed questionnaires into the statistical software Statistical Package for Social Science.²⁵ We checked accuracy of data by random selection and all checked data were 100 percent accurate. Prior to analysis, there was a small amount of missing data found on several variables. The mean percentage of missing data across variables in the data set was less than 1 percent. Therefore, missing data were excluded from the complete data analysis.

We summarized demographic data provided by participants using descriptive statistics (i.e., frequencies and percentages). To assess the relationships among variables, we analyzed data with a Pearson correlation. Prior to regression analyses, the results of Pearson correlations provide the significance and strength of the relationships among the variables. Strong and significant relationships among the variables of interest justify further investigation using multiple regression. To investigate which variables best predicted participants' work motivation, we conducted multiple regression analyses. To control the impact of demographic variables (i.e., age, sex, and ethnicity) in the multiple regression

(Continued on page 58)

Table 1. Demographic Characteristics of the Participants (n = 128)

Variable	n (%)
Sex	
Male	62 (48.4%)
Female	66 (51.6%)
Race/ethnicity	
African American	4 (3.2%)
Asian or Pacific Islander	5 (4.0%)
Caucasian	112 (88.9%)
Hispanic	4 (3.2%)
Other	1 (0.8%)
Education level	
Completed high school or equivalent	30 (23.6%)
Training after high school, other than college	7 (5.5%)
Some college	45 (35.4%)
College graduate	39 (30.7%)
Postgraduate	6 (4.7%)
Employment	
Working full time	45 (35.7%)
Working part time	30 (23.8%)
Unemployed looking for work	15 (11.9%)
Unemployed not looking for work	21 (16.7%)
Disabled and unable to work	8 (6.3%)
Other	7 (5.6%)
Treatment	
Surgery	50 (40.0%)
Surgery, radiation, and chemotherapy	35 (28.0%)
Surgery and radiation	19 (15.2%)
Surgery and chemotherapy	8 (6.4%)
Radiation and chemotherapy	3 (3.2%)
Only radiation	4 (5.6%)
Only chemotherapy	3 (2.4%)
Surgery, radiation, chemotherapy, and stem cell transplant	2 (1.6%)
Received no treatment	1 (0.8%)

Percentages may not add up to exactly 100 due to rounding.

(Continued from page 56)

analysis, we performed hierarchical regression. In the first step, age, sex, and ethnicity were entered into the regression to be controlled and then predictors of interest that were to be evaluated were all entered together. As articulated in the research question, work motivation (Behavioral Regulation in Work Questionnaire) was measured as the dependent variable with career readiness (Clear Thoughts Inventory-Commitment Anxiety, Clear Thoughts Inventory-Decision Making Confusion, Clear Thoughts Inventory-External Conflicts), work personality (Revised Development of Work Personality Scale-Work Tasks), and core self-evaluation (Core Self-Evaluation Scale) as the three predictor variables.

The Pearson correlation and multiple regression analyses that we conducted to examine the relationship between work motivation and various potential predictors are summarized in Table 2, below. The Behavioral Regulation in Work Questionnaire significantly correlated in a positive manner with the Core Self-Evaluation Scale. On the other hand, the Behavioral Regulation in Work Questionnaire significantly correlated in a negative manner with the Clear Thoughts Inventory scores on the three critical areas of career readiness: decision-making confusion, commitment anxiety, and external conflict. Finally, the Behavioral Regulation in Work Questionnaire only slightly correlated and not in a significant manner with the Revised Development of Work Personality Scale (Work Tasks subscale).

We calculated a hierarchical multiple linear regression to predict work motivation (Behavioral Regulation in Work Ques-

tionnaire) based on the Clear Thoughts Inventory scores on commitment anxiety, decision-making confusion, and external conflict; the Revised Development of Work Personality Scale; and the Core Self-Evaluation Scale. Table 3, page 59, displays the standardized regression coefficients (β), R^2 , and adjusted R^2 values. The R^2 value accounted for 19 percent of the variance, indicating that the regression was significantly different from zero, $F(3, 118) = 1.444, p < 0.001$. That is, the combination of predictors used in the regression analyses had a significant linear relationship to participants' work motivation. In addition, for young adult survivors of CNS tumors who participated in the study, the Core Self-Evaluation Scale is a significant positive predictor of work motivation. For every 1.00 increase in core self-evaluation, participants' work motivation had an increase of 0.443. However, the other four factors did not uniquely contribute to the prediction of participants' work motivation.

It is important to note that there are potential limitations to our study that might inform potential future research with young adult survivors of cancer. The data we collected were based on self-reported information from study participants and could be subject to biases. Our study was also designed using cross-sectional data of a small sample that lacks racial diversity. Due to this small sample, there is a risk that the answers provided by this subset of cancer survivors may not be indicative of the entire young adult survivor community.

Table 2. Correlations Between Variables

Variables	1	2	3	4	5	6	7	8	9
1. Age	—								
2. Sex	0.00	—							
3. Ethnicity	-0.10	0.12	—						
4. BRWQ total	0.19*	-0.02	-0.04	—					
5. CTI-CA	-0.08	0.09	0.10	-0.33***	—				
6. CTI-DMC	0.04	0.12	0.02	-0.29**	-0.91***	—			
7. CTI-EC	-0.07	0.04	0.18*	-0.22*	0.74***	0.71***	—		
8. RDWPS- Work Tasks	-0.13	-0.16	0.00	0.15	-0.28***	-0.32***	-0.39***	—	
9. CSES Total	0.01	-0.00	-0.08	0.43***	-0.73***	-0.73***	-0.64***	0.28***	—
Mean (M)	23.27	0.48	1.12	53.58	18.08	22.83	7.56	27.21	46.34
Standard error (S)	0.30	0.04	0.06	1.25	0.79	0.93	0.28	0.39	0.92
Standard deviations (SD)	3.39	0.50	0.64	13.94	7.85	10.44	3.18	4.36	10.33

BRWQ = Behavioral Regulation in Work Questionnaire; CTI = Career Thoughts Inventory; CA = Commitment Anxiety subscale; DMC = Decision Making Confusion subscale; EC = External Conflict subscale; RDWPS-Work Tasks = Revised Developmental Work Personality Scale-Work Tasks subscale; CSES = Core Self-evaluation Scale total score.

* $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Lessons Learned

The primary aim of our study was to examine the relationship of an individual's core self-evaluation, career readiness, and work personality against their work motivation among a sample of young adult survivors of central nervous system cancer. Our findings provided further support to prior research that core self-evaluation, work personality, and career readiness collectively contribute to young adult cancer survivors' work motivation. Additionally, these results highlight that core self-evaluation—individuals' perceptions of how they see themselves and the world—stood out as the best predictor of increased work motivation. The study results indicated that the vocational psychology constructs of career readiness, core self-evaluation, and work

personality accounted for 19 percent of the variance in work motivation.

Our findings also provide additional support for the relationships conveyed within the Illinois Work and Well-Being Model framework. For young adult survivors of CNS cancer, personal factors, such as core self-evaluation and work personality, are directly related to work motivation within career acquisition. Additionally, within the career development domain, individual awareness factors such as dysfunctional career thinking have a direct relationship with the acquisition factor of work motivation. Furthermore, young adult survivors of central nervous system cancer experience higher rates of unemployment, and work motivation interventions may be able decrease this rate. The

Table 3. Results from Multiple Regression Analyses Predicting Work Motivation Among Young Adult CNS Cancer Survivors (n = 128)

Variables	Model 1			Model 2		
	β	<i>t</i>	<i>p</i>	β	<i>t</i>	<i>p</i>
Age	0.182	2.006	0.047*	0.186	2.166	0.032
Sex	-0.027	-0.291	0.771	0.007	0.078	0.938
Ethnicity	-0.020	-0.215	0.830	-0.005	-0.054	0.957
CTI-CA				-0.221	-1.049	0.296
CTI-DMC				0.087	0.421	0.675
CTI-EC				0.207	1.549	0.124
RDWPS				0.107	1.176	0.242
CSES				0.443	3.471	0.001***
<i>R</i> ²	0.035			0.246		
<i>R</i> ² adj	0.011			0.193		
<i>F</i>	1.444			4.613		
<i>df</i>	(3, 118)			(8, 113)		
<i>p</i>	0.235			<0.001***		
ΔR^2	—			0.211		
<i>F</i> for ΔR^2	—			6.322		
<i>df</i> for ΔR^2	—			(5, 113)		
<i>p</i> for ΔR^2	—			<0.001***		


Beta is the standardized regression coefficient; Model 1 regressed work motivation on all control variables.

CA = Commitment Anxiety subscale; CNS = Central nervous system; CTI = Career Thoughts Inventory; DMC = Decision Making Confusion subscale; EC = External Conflict subscale; RDWPS-Work Tasks = Revised Developmental Work Personality Scale-Work Tasks subscale; CSES = Core Self-evaluation Scale total score.

* $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

results suggest that tailoring interventions toward increasing an individual's vocational identity by improving core self-evaluation and work personality and decreasing an individual's dysfunctional career thinking could improve work motivation and employment outcomes for cancer survivors. Specifically, particular attention should be aimed at increasing one's core self-evaluation, given that our findings suggest that the Core Self-evaluation Scale is the strongest predictor of work motivation compared to the other instruments used in our study. The results of our study provide a more complete picture of the vocational psychology factors that impact work motivation among young adult survivors of cancer. Career interventions aimed at increasing core self-evaluation, career readiness, and work personality can improve young adult cancer survivors' work motivation, therefore improving their career and vocational outcomes.

Looking Ahead

Our study provides a springboard for future directions of research among cancer survivors. For example, future research could examine other work outcomes, in addition to motivation, or it could differentiate between influences of either intrinsic or extrinsic motivation. Studies applying multivariate statistical techniques with a larger sample size could provide a more detailed understanding of the cross-domain interactions within the Illinois Work and Well-Being Model and career outcomes. Lastly, the analyses of our study used the total instrument scores of the scales and did not investigate the possible significance among the subscales. Subsequent studies should consider the possibility of explaining more fully the relationships among these variables by utilizing all of the appropriate instrument subscales. 

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FOSTERING EXCELLENCE IN CARE AND OUTCOMES IN PATIENTS WITH STAGE III/IV NSCLC

Quality Improvement Initiative Outcomes

The Association of Community Cancer Centers (ACCC) conducted a national multi-phase effort in 2019 to explore coordination and communication within the multidisciplinary cancer care team to help understand existing barriers and create and execute process improvement plans to support the optimization of care for patients diagnosed with stages III and IV NSCLC.

Six cancer programs—from a variety of settings and locations across the U.S.—were selected by a multidisciplinary Steering Committee to participate in a six-month process improvement initiative. The cancer programs shared quality improvement (QI) topics of interest that were relevant to their sites, identified problem statements to address, and reported out on the improvements that were made. The six areas of focus include:

Quality Improvements to Enhance Molecular Testing Workflow

FirstHealth Moore Regional Hospital
Pinehurst, NC

Improving Identification of Immune-Related Adverse Events

O'Neal Comprehensive Cancer Center at the University of Alabama
Birmingham, AL

Quality Improvement Programs in Palliative Care, irAE Management, and Molecular Testing

Saint Francis Cancer Center
Tulsa, OK

Tracking and Improving Biomarker Test Results

Southern Ohio Medical Center
Portsmouth, OH

Improving Smoking Cessation Programs

Sutter Cancer Center, Sutter Medical Center
Sacramento, CA

Discovering Gaps in Biomarker Testing

Tennessee Oncology
Nashville, TN

The self-identified problem statements—and the improvements made—for the six participating cancer program participants are outlined on the ACCC website at acc-cancer.org/NSCLC-QI. The learnings and key takeaways that were uncovered may assist other cancer programs as they seek to improve care of this patient population.

Partner Organizations



"Fostering Excellence in Care and Outcomes in Patients with Stage III and IV NSCLC" was made possible by support from AstraZeneca.





A Framework for Defining High-Quality Care for Patients with NSCLC

Clinical guidelines for non-small cell lung cancer (NSCLC) provide recommendations on individual components of care; however, guidance spanning the complete care pathway is lacking. In 2020, the Association of Community Cancer Centers' (ACCC) National Quality Care initiative aimed to develop quality-focused recommendations for multidisciplinary teams to identify key patient- and healthcare-centered interventions and establish a benchmark for ideal, high-quality NSCLC care.

To do so, ACCC convened a Steering Committee of multidisciplinary specialists and representation from patient advocacy and professional associations. Members were selected based on their specialized expertise, from leaders in research and/or members of medical societies or organizations dedicated to advancing care for patients with NSCLC. Additionally, engaged ACCC members nominated individuals based on their involvement and contributions to previous ACCC educational initiatives. The Steering Committee collaborated multiple times via webinars and teleconferences and provided individual feedback and comments via independent reviews over email communications and collaborative, concurrent group reviews through a Google web-based software office suite.

This steering group was then tasked with 1) compiling evidence-based recommendations via a systematic search of clinical guidelines and peer-reviewed journals and 2) proposing additional elements so that the quality-focused recommendations would encompass the entire care continuum. Specifically, the committee conducted a systematic search of published standards by quality

The rationale for this research was to provide a quality benchmark for cancer programs and practices by defining ideal care in different aspects of NSCLC management, with particular emphasis on multidisciplinary cancer care team management of NSCLC.

care provision organizations; guideline repository sites, such as the National Comprehensive Cancer Network (NCCN), the European Society for Medical Oncology, and the American Society of Clinical Oncology (ASCO); and articles in peer-reviewed journals. The Steering Committee also reviewed standards from oncology accrediting organizations, including the ASCO Quality Oncology Practice Initiative and the American College of Surgeons Commission on Cancer. When guidelines were not consistent with the current recommended “best” practice(s) and/or where no formal quality metrics existed, the committee accepted expert input from oncologists. Accordingly, the Steering Committee’s recommendations represented a combination of known measures

and other evidence-based recommendations (Figure 1, below).

Quality criteria recommendations were structured to address four key care areas of the patient journey:

1. Care coordination and patient education
2. Diagnosis and biomarker testing
3. Staging and treatment planning
4. Survivorship.


Next, the Steering Committee used these recommendations to design a quality initiative framework for a national online survey of multidisciplinary cancer care teams to assess how patients with Stage III and IV NSCLC are diagnosed and managed across different United States-based cancer programs.¹ The rationale for this research was to provide a quality benchmark for cancer programs and practices by defining ideal care in different aspects of NSCLC management, with particular emphasis on multidisciplinary cancer care team management of NSCLC.

Overall, the ACCC Steering Committee developed 32 recommendations targeting key phases of NSCLC care, including:

- Involvement of a multidisciplinary team care navigator
- Patient participation in shared decision-making
- Standardized patient education on NSCLC management
- Multidisciplinary evaluation of suspicious findings
- Multidisciplinary cancer care team coordination for efficient biopsy collection

- Repeat biopsy and/or plasma testing when insufficient tissue is available
- Adoption of optimal invasive staging procedures
- Use of comprehensive biomarker testing to inform clinical decisions
- Implementation of standardized protocols for short- and long-term surveillance
- Provision of survivorship care plans.

These quality-focused recommendations define ideal, high-quality NSCLC care, serving as a valuable resource to guide multidisciplinary practice and quality improvement initiatives. As such, these recommendations were accepted for online publication as part of the ASCO Virtual Scientific Program 2020 (May 29-31, 2020) and were presented at the ASCO Quality Care Symposium (abstract 229; Oct. 9-10, 2020).

Table 1, pages 65-67, lists all 32 recommendations. Note: due to updates to NCCN Guidelines® (version 5.2021) released after this work was complete, some recommendations no longer reflect standard of care. Where appropriate, readers are referred to current clinical practice guidelines, with original recommendations appearing in blue. Cancer programs and practices should consider sharing these quality recommendations with their multidisciplinary cancer teams and using them to guide future NSCLC quality and process improvement efforts. 

(Continued on page 68)

Figure 1. ACCC Quality-Focused NSCLC Recommendations



Table 1. Quality Recommendations for Ideal NSCLC Care*

Diagnosis
1.1 Screening/risk reduction
1.1.1 LDCT screening services should be made available for select high-risk smokers and former smokers who are potential candidates for definitive treatment. ^{2,3}
1.1.2 Institutions carrying out lung cancer screening should employ a multidisciplinary approach, including the specialties of thoracic radiology, pulmonary medicine, and thoracic surgery, ² as determined by the anatomical location of the node.
1.1.3 Smoking cessation options should be made available to any/all interested patients, and smoking history should be documented, including both the extent of exposure in pack-years and the amount of time since smoking cessation in the case of former smokers. ^{2,4}
1.2 Clinical presentation/workup
1.2.1 Suspicious findings should be evaluated by an MDT comprising a medical and radiation oncologist along with a thoracic surgeon, a radiologist, and a representative from pulmonary medicine with experience in the diagnosis of lung cancer. ^{5,6}
1.2.2 For Stage I/II and IIIA disease, patients should undergo invasive mediastinal staging (mediastinoscopy, endobronchial ultrasound, or endoscopic ultrasound), followed by a bronchoscopy and finally surgical resection. Consider concurrent chemoradiation or chemotherapy for select Stage IIIA patients prior to surgical re-evaluation and surgery. ^{5,6}
1.2.3 Decisions regarding optimal diagnostic steps/biopsy and fine-needle aspiration/collection of adequate tissue should be made by an MDT comprising medical and radiation oncologists, radiologists, interventional radiologists, pulmonologists, thoracic surgeons, and pathologists with experience in the diagnosis of lung cancer. ^{5,6}
1.2.4 A pathologist should assess the adequacy of biopsy tissue for histologic subtype staging, as well as molecular testing and PD-L1 testing (where appropriate) ⁷ ; a plan should be in place to rebiopsy and/or perform plasma testing if additional tissue is necessary to complete the workup. ^{5,6}
1.3 Evaluation
1.3.1 Determination of surgical resection, surgical staging, and pulmonary resection should be carried out by a board-certified thoracic surgeon with experience in lung cancer surgery (within the context of an MDT). ^{5,6}
1.3.2 At least six nodes should be removed during surgical resection, three each from the N1 and N2 stations. ^{5,6}
1.3.3 Systemic staging should be carried out using an FDG PET/CT scan in combination with brain MRI with contrast. ^{5,6}
1.3.4 Clinical staging should be carried out in line with the recommendations from the latest version of the AJCC staging manual (eighth edition). ^{5,6}
1.3.5 In the case of advanced or metastatic non-squamous lung cancer, refer to the most current available NCCN clinical practice guidelines for specific biomarker testing recommendations. In the case of advanced or metastatic non-squamous lung cancer, testing for EGFR, ALK, ROS1, and BRAF mutations and PD-L1 expression should be included as part of the broader molecular profiling, including emerging biomarkers for which effective drugs may already be available, such as proto-oncogene receptor tyrosine kinase (MET) amplification or mutation, rearranged during transfection (RET) rearrangements, human epidermal growth factor receptor 2 (HER2) mutations, and tumor mutational burden. ⁸ Additionally, testing for rare driver mutations, including the NTRK gene fusion, should be performed. ^{5,6,9}

Table 1 (continued). Quality Recommendations for Ideal NSCLC Care*

1.3.6 In the case of advanced or metastatic squamous lung cancer, refer to the most current available NCCN clinical practice guidelines for specific biomarker testing recommendations. In the case of advanced or metastatic squamous cancer, in addition to standard testing for PD-L1 expression and EGFR and ALK mutations, testing should be considered in never-smokers, for small biopsy specimens, or in cases of mixed histology. ROS1 and BRAF gene testing should be considered for small biopsy specimens or in specimens with mixed histology.⁹ Broader molecular profiling with the goal of identifying emerging biomarkers for which effective drugs may already be available, such as MET exon 14 skipping and RET rearrangements, should be considered. Identification of rare driver mutations, including NTRK1/2/3 gene fusions, should be performed and appropriate counselling should be offered to patients on available clinical trials.^{5,6}

1.3.7 Results of all biomarker tests should be returned and taken into consideration prior to making any shared clinical decisions.^{5,6}

1.3.8 Processes to minimize the turnaround time for all biomarker test results should be instituted. Laboratories with an average turnaround time of greater than 10 business days should be encouraged to provide a more rapid test, either in-house or through a reference laboratory.⁹

1.3.9 cfDNA/ctDNA testing should not be used in lieu of a histologic tissue diagnosis. cfDNA/ctDNA testing may be considered in specific circumstances, such as when a) a patient is deemed medically unfit to undergo invasive tissue sampling or b) in the initial diagnostic setting, if following pathologic confirmation of an NSCLC diagnosis there is insufficient biopsy material for molecular testing and when a follow-up tissue-based analysis is planned for all patients in whom an oncogenic driver mutation has not been identified.^{5,6}

Treatment

2.1 General

2.1.1 A care plan compliant with the 13 components in the Institute of Medicine (now called the National Academy of Medicine) Care Management Plan should be provided to patients prior to receipt of the first therapeutic modality.¹⁰

2.1.2 Palliative care should be integrated as early as possible during provision of standard oncology care services.^{5,6}

2.2. Radiation

2.2.1 Determination of the appropriateness of XRT should be made by board-certified radiation oncologists with experience in lung cancer XRT (either as definitive and/or palliative treatment) within the context of the MDT.^{5,6}

2.2.2 For patients managed by radiation alone, a minimum dose of 60 Gy is recommended. Dose escalation beyond 60 Gy during combined modality concurrent chemoradiation has no clinical benefits.¹¹

2.2.3 In the context of combined modality therapy, chemotherapy and radiation should be given concurrently to maximize survival, local control, and disease RR.¹¹

2.2.4 For patients with Stage IV NSCLC, routine use of concurrent thoracic chemoradiation is not recommended.¹²

2.3. Chemotherapy or combination treatment modalities

2.3.1 Refer to the most current available NCCN clinical practice guidelines for chemotherapy or combination treatment recommendations. Neoadjuvant chemotherapy or concurrent chemoradiation should be offered to select patients diagnosed with Stage IIIA disease,^{5,6,13} adjuvant chemotherapy should be considered for patients with high-risk Stage IB/IIB disease and offered to patients with resected Stage IIIA disease, and definitive concurrent chemoradiation followed by durvalumab should be offered to patients with unresectable Stage IIIA, IIIB, and IIIC disease.^{5,6,8}

2.3.2 Refer to the most current available NCCN clinical practice guidelines for chemotherapy or combination treatment recommendations. Mutation-directed TKIs should be offered to patients with advanced or metastatic NSCLC who test positive for the EGFR, ALK, or ROS1 mutation, optimally as first-line treatment options. Mutation-directed TKIs should be offered to patients with advanced or metastatic NSCLC who test positive for the BRAF V600E mutation. TKIs should be offered to patients with metastatic NSCLC who test positive for the NTRK gene fusion.^{5,6}

Table 1 (continued). Quality Recommendations for Ideal NSCLC Care*

2.3.3 Refer to the most current available NCCN clinical practice guidelines for chemotherapy or combination treatment recommendations. Plasma-based testing of acquired resistant mutation T790M should be considered for patients with EGFR mutations who progress on first-line first- or second-generation EGFR TKIs. Tissue-based testing with rebiopsied tissue should be considered if results of the plasma-based tests are negative.^{5,6}

2.3.4 Refer to the most current available NCCN clinical practice guidelines for chemotherapy or combination treatment recommendations. If the test results for driver mutations are negative and PD-L1 expression is ≥ 50 percent, patients should be offered pembrolizumab alone or pembrolizumab plus platinum-doublet chemotherapy or atezolizumab plus bevacizumab plus platinum-doublet chemotherapy for non-squamous carcinomas and pembrolizumab alone or pembrolizumab plus platinum-doublet chemotherapy for squamous carcinomas as first-line therapy for Stage IV NSCLC.^{5,6,8}

2.3.5 Refer to the most current available NCCN clinical practice guidelines for chemotherapy or combination treatment recommendations. If test results for driver mutations are negative and PD-L1 expression is < 50 percent, patients should be offered pembrolizumab plus platinum-doublet chemotherapy, or atezolizumab plus bevacizumab plus platinum-doublet chemotherapy, or platinum-doublet chemotherapy, or non-platinum-doublet chemotherapy, or single-agent chemotherapy for non-squamous carcinomas and pembrolizumab plus platinum-doublet chemotherapy, or platinum-doublet chemotherapy, or non-platinum-doublet chemotherapy, or single-agent chemotherapy for squamous carcinomas as first-line therapy for Stage IV NSCLC.^{5,6,8}

3. Care coordination and patient education

3.1 All patients should be educated by a member(s) of the multidisciplinary cancer care team on NSCLC, diagnosis, staging, biomarker testing, prognosis, treatment plan, possible side effects, and response expectations prior to initiation of therapy.

3.2 All patients should receive care navigation as standard care and participate in SDM with regard to their comprehensive cancer care plan.

3.3 All patients should have access to a member of the multidisciplinary cancer care team who can answer questions regarding the financial aspects of their treatment plan, including, but not limited to, the need for prior authorizations and out-of-pocket costs.

4. Survivorship

4.1 Standard protocols should be instituted for chest CT scans (with or without contrast) and history and physical examinations for initial surveillance (2-5 years), followed by annual low-dose non-contrast-enhanced CT scans and history and physical examination (based on Stage at diagnosis).^{5,6}

4.2 Survivorship care plans should be instituted for patients with locally advanced NSCLC treated with a curative intent.

AJCC = American Joint Committee on Cancer; ALK = anaplastic lymphoma kinase; BRAF = proto-oncogene B-Raf; cfDNA = cell-free DNA; CT = computed tomography; ctDNA = circulating tumor DNA; EGFR = epidermal growth factor receptor; FDG = fluorodeoxyglucose; LDCT = low-dose computed tomography; MDT = multidisciplinary team; MRI = magnetic resonance imaging; NTRK = neurotrophic receptor tyrosine kinase; PD-L1 = programmed death ligand-1; PET = positron-emission tomography; ROS1 = c-ros oncogene 1; RR = response rate; SDM = shared decision-making; TKI = tyrosine kinase inhibitor; XRT = radiotherapy.

*Editor's Note: Due to updates to NCCN Guidelines (version 5.2021) released after this work was complete, some recommendations no longer reflect standard of care. Where appropriate, readers are referred to current clinical practice guidelines, with original recommendations appearing in blue.

(Continued from page 64)

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ASSOCIATION OF COMMUNITY
CANCER CENTERS

IMPROVING CARE FOR PATIENTS
WITH ADVANCED NON-SMALL CELL
LUNG CANCER

RESULTS FROM A NATIONAL QUALITY SURVEY
FOR THORACIC SURGEONS, RADIATION
ONCOLOGISTS, AND
MEDICAL ONCOLOGISTS



BY BRENDON STILES, MD;
LEIGH M. BOEHMER, PHARM.D;
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AND PERCY LEE, MD

The Association of Community Cancer Centers (ACCC), a collaborative and diverse cancer care organization, conducted a national survey across several cancer programs in the United States, with the aim of informing the design and execution of process-improvement plans to address identified barriers for ideal management of patients with non-small cell lung cancer (NSCLC).¹ NSCLC accounts for 85 percent of all lung cancer cases; it is the second most common cancer in the U.S.² Notably, over the past decade, a decline in lung cancer mortality was observed owing to advances in early detection and treatments.^{3,4} Understanding molecular subtypes and employing targeted therapies have improved treatment regimens, thereby improving overall survival of patients with metastatic NSCLC.⁵ Additionally, immune checkpoint inhibitors after concurrent chemoradiation therapy have become a standard of care for the treatment of unresectable Stage III NSCLC.⁵⁻⁷ Despite these advances, the 5-year survival rate (2009–2015) is 35 percent for locally advanced NSCLC and 6 percent for those with distant metastasis.⁸ Nevertheless, distinct subgroups of Stage III and IV patients may experience much better survival with targeted therapy or immunotherapy,^{5,9} highlighting the need for optimal management and an informed patient-centric approach to NSCLC.

The Role of the Multidisciplinary Team

Multidisciplinary teams help streamline and optimize quality of care. In lung cancer, these teams are associated with enhanced patient involvement in decision-making, timely care delivery, accurate staging, and appropriate treatment planning.¹⁰ Treatment of NSCLC has evolved with the introduction of combined treatment modalities for Stage III NSCLC and a personalized approach for Stage IV NSCLC involving a collaboration of thoracic surgeons, radiation oncologists, and medical oncologists.¹¹

Thoracic surgeons play a prominent role in the management of advanced NSCLC by performing diagnostic procedures, such as mediastinoscopy or endobronchial ultrasound (EBUS) transbronchial needle aspiration with mediastinal nodal sampling, to obtain adequate tissue for detailed molecular testing and re-biopsy of a tissue to identify acquired resistance, enabling

appropriate stage-based treatment decision-making and improving survival.¹² Additionally, according to 2020 National Comprehensive Cancer Network® (NCCN) guidelines, thoracic surgeons, as part of the multidisciplinary cancer care team, should play a major role in defining the resectability of tumors in patients with NSCLC, including those with N2-positive lymph nodes.^{9,13}

Radiation therapy has a potential role in all stages of NSCLC. A radiation oncologist is key to determining the appropriateness of radiation therapy.⁹ As part of the multidisciplinary team, radiation oncologists should be integral to the decision-making process for patients with early-stage NSCLC who are medically inoperable, refuse surgery, or are high-risk surgical candidates and for all patients at Stage III.⁹ These professionals should also be involved with the multidisciplinary team for the management of patients with Stage IV NSCLC with limited disease burden, who may benefit from aggressive local consolidative therapies.⁹ Additionally, radiation therapy may play a central role in palliative care by reducing pain and hemoptysis and preventing the progression of neurological symptoms due to brain metastases;¹⁴ therefore, it is important that radiation oncologists participate in palliative care to offer options and potentially improve the quality of life of patients.¹⁴

Medical oncologists have a prominent role in diagnosis, staging, and treatment decision-making.¹⁵ According to the NCCN Guidelines®, patients with NSCLC should be referred to medical oncology for evaluation.⁹ These professionals suggest diagnostic and biomarker tests that help decide targeted treatment and identify markers for sensitivity or resistance to specific drugs.¹⁵ Further, the presence of medical oncologists on the multidisciplinary team is essential for the implementation of an appropriate course of treatment.⁹ Medical oncologists prescribe the most beneficial treatment by considering the patient's comorbidities, performance status, and organ function¹⁶ and avoid unnecessary toxicity by their understanding of potential drug-drug interactions.¹⁵

Multidisciplinary management is crucial for patients with advanced stages of NSCLC to minimize low-yield diagnostic procedures, expedite treatment, and provide optimal

management and care.¹²

The objectives of this discipline-specific sub-analysis were to:

- Investigate coordination and communication within multidisciplinary teams
- Understand the value of these teams
- Evaluate the understanding of evolving standards for diagnosis, biomarker testing, and treatment planning
- Identify the barriers to optimal care faced by thoracic surgeons and radiation and medical oncologists for patients with Stage III/IV NSCLC.

However, the overarching goal of the survey was to identify the barriers and suggest improvements in practice patterns to ensure delivery of the highest quality of care for patients with advanced NSCLC.

Methods and Materials

A comprehensive, double-blind, web-based survey was conducted over a 4-month period between January 2019 and April 2019. The full methodology of the survey can be found in Salgia et al., 2020.¹⁷ ACCC convened an expert Steering Committee consisting of a medical oncologist, thoracic surgeon, radiation oncologist, pathologist, pulmonologist, nurse navigator, and representatives from patient advocacy, who informed and guided the development of the survey questionnaire. Overall, 108 questions were included in the survey and were structured to elicit information and perceptions of teams involved in the direct management of NSCLC during the entire patient journey.

Subsequently, 84 survey questions were customized for thoracic surgeons and medical and radiation oncologists; the responses obtained from these disciplines, including extent of participation in multidisciplinary teams and shared decision-making, familiarity with guidelines, definition and management of unresectable tumors, adoption of clinical pathways, management of immune-related adverse events (irAEs), and barriers to advanced NSCLC care, were the focus of this analysis. Additionally, parameters were sub-analyzed according to respondents' discipline (medical oncologist, radiation oncologist, or thoracic surgeon), program type, and practice region. In terms of scoring to aid interpretation, continuous variables, including engagement in shared decision-making, were labeled "reverse scored;" scores of 1, 2, 3, 4, and 5 indicated "Never," "Rarely," "Occasionally," "Frequently," and "Almost always," respectively.

Results: Respondents' Disposition and Characteristics

Overall, 639 respondents completed the survey (response rate, 52.8 percent), representing 160 unique cancer programs across 44 states within the U.S. The respondents included thoracic

surgeons, medical oncologists, radiation oncologists, pulmonologists, pathologists, oncology nurses, nurse navigators and advanced practice nurses, financial advocates, social workers who provide financial counseling and support patient access, pharmacists, and cancer program administrators. The characteristics of the survey respondents are presented in Salgia et al., 2020.¹⁷

Thoracic surgeons (n=72), radiation oncologists (n=114), and medical oncologists (n=114) constituted 46.9 percent of the respondents (see Table 1, page 76). Thoracic surgeons and medical and radiation oncologists were largely associated with a National Cancer Institute (NCI)-Designated Comprehensive Cancer Center Program (NCIP; 59/300, 19.7 percent), a Community Cancer Program (CCP; 55/300, 18.3 percent), and/or an Academic Comprehensive Cancer Program (ACAD; 54/300, 18 percent). A high proportion of the respondents practiced in the urban (174/300, 58 percent) and suburban (101/300, 33.7 percent) regions. Notably, 60.3 percent of respondents treated more than 50 patients with NSCLC annually. Overall, 35.2 percent of treated patients had Stage III and 39.8 percent had Stage IV disease.

Results: Care Coordination and Patient Engagement

A high proportion of respondents indicated that they "frequently" or "almost always" engaged in shared decision-making.¹⁷ Notably, thoracic surgeons and medical and radiation oncologists had mean engagement scores ranging from 3.29 to 4.73, indicating that these disciplines "occasionally" or "frequently" engaged in shared decision-making. The highest mean engagement score (4.44) was associated with shared decision-making for tailoring care plans based on the values, goals, and preferences expressed by patients, followed by use of decision aids (4.20) and asking patients about their treatment-related values, goals, and preferences (4.16). However, shared decision-making engagement differed among disciplines (see Figure 1, page 78).

Results: Screening, Diagnosis, and Biomarker Testing

No significant difference was observed between disciplines for familiarity with the eighth edition of the American Joint Commission on Cancer Tumor Node Metastasis staging system and the 2018 update of the College of American Pathologists/International Association for the Study of Lung Cancer/Association for Molecular Pathology molecular testing guideline for lung cancer across program types and regions.

A larger proportion of ACAD respondents were more likely to be familiar or "very" familiar vs. "not" or "somewhat" familiar with broad genomic profiling using next-generation sequencing (NGS; 81 percent vs. 19 percent; $p=0.023$); how

ever, no significant difference for the use of NGS was observed across other program types. Additionally, respondents from an Integrated Network Cancer Program were more likely to be “not” or “somewhat” familiar vs. familiar or “very” familiar with tumor mutation burden (66.7 percent vs. 33.3 percent; $p=0.031$).

Results: Staging and Treatment Planning

Definition of unresectability, primarily evaluated by suspected mediastinal node metastases, computed tomography (CT) or positron-emission tomography (PET)/CT evidence of mediastinal nodal metastases, mediastinal nodal metastases confirmed by biopsy, low-volume single station ipsilateral nodal metastases, low-volume multi-station ipsilateral nodal metastases, bulky multi-station ipsilateral mediastinal nodal metastases, and contralateral mediastinal nodal metastases, was analyzed across disciplines and program types. Notably, a significantly higher proportion of medical oncologists vs. thoracic surgeons considered a tumor unresectable when mediastinal nodal metastases were confirmed by biopsy (64.9 percent vs. 48.6 percent, $p=0.03$). However, no significant difference was observed between thoracic surgeons and medical oncologists in defining unresectability according to suspected mediastinal nodal metastases, CT or PET/CT evidence of mediastinal nodal metastases, low-volume single nodal station ipsilateral nodal metastases, low-volume multi-station ipsilateral nodal metastases, bulky multi-station ipsilateral mediastinal nodal metastases, and contralateral mediastinal nodal metastases (see Figure 2, page 79). Of note, when compared across program types, thoracic surgeons and medical oncologists from Community Cancer Programs were significantly more likely (75 percent vs. 25 percent; $p=0.012$) to define tumors with mediastinal nodal metastases confirmed by biopsy as unresectable vs. resectable, whereas those from the Integrated Network Cancer Program were less likely (22.2 percent vs. 77.8 percent; $p=0.012$) to define tumors with mediastinal nodal metastases confirmed by biopsy as unresectable vs. resectable. Additionally, all thoracic surgeons and medical oncologists from NCI-Designated Comprehensive Cancer Center Programs (100 percent vs. 0 percent; $p=0.036$) and a majority of those from Hospital Associate Cancer Programs (72.2 percent vs. 27.8 percent; $p=0.036$) defined tumors with low-volume single nodal station ipsilateral nodal metastases as resectable vs. unresectable. However, the differences in defining unresectability were not significant between community and academic program types. Moreover, a significantly higher proportion of thoracic surgeons and medical oncologists from urban regions vs. rural/suburban regions (76.9 percent vs. 23.1 percent; $p=0.002$) defined tumors with suspected mediastinal nodal metastases as unresectable.

Additionally, the presence of a resectability protocol was evaluated across program types and regions. Most respon-

dents (81.3 percent) from programs in the rural region indicated that they did not have a specific protocol to define resectability, whereas 48.9 percent of respondents from programs in the urban region had a specific resectability protocol. Moreover, respondents indicated that a significantly higher proportion of programs with multidisciplinary clinics used specific protocols to define unresectable Stage III tumors compared with programs that did not have these types of clinics (79.6 percent vs. 20.4 percent; $p=0.034$). A higher proportion of programs with multidisciplinary clinics vs. programs without these clinics ($p\leq 0.017$) primarily defined unresectable tumors based on suspected mediastinal nodal metastases, CT or PET/CT evidence of mediastinal nodal metastases, mediastinal nodal metastases confirmed by biopsy, low-volume single-station ipsilateral nodal metastases, bulky multi-station ipsilateral mediastinal nodal metastases, and contralateral mediastinal nodal metastases. Furthermore, a significantly higher proportion of thoracic surgeons and medical oncologists from programs with multidisciplinary clinics vs. without these clinics defined suspected mediastinal nodal metastases as unresectable (see Table 2, page 77). Of note, no significant association was observed between the primary definition of an unresectable tumor and who makes the decision of resection—multidisciplinary clinics, thoracic surgeons alone, or medical oncologists who refer their patients to surgeons. Overall, 34.6 percent (44/127) of thoracic surgeons and radiation and medical oncologists indicated that medical oncologists referred patients for resection to surgeons. However, a significant difference ($p<0.001$) was observed among the different disciplines; radiation oncologists (42.5 percent) responded that multidisciplinary clinics decided on the tumor resectability, whereas medical oncologists (55.8 percent) and thoracic surgeons (31.4 percent) responded that it was the task of medical oncologists to recommend resection to the patient and refer the patient to a surgeon.

Overall, 7 percent of radiation oncologists and 6.7 percent of medical oncologists indicated that more than 50 percent of patients with unresectable Stage III NSCLC received radiation alone instead of concurrent chemoradiation therapy. Additionally, 12.7 percent of radiation oncologists and 15.6 percent of medical oncologists indicated that more than 50 percent of patients with unresectable Stage III NSCLC received chemotherapy alone instead of concurrent chemoradiation therapy. Notably, a significantly higher percentage of radiation oncologists compared with medical oncologists responded that less than 5 percent of patients with Stage III NSCLC refused the initial first-line treatment option (73.5 percent vs. 26.5 percent; $p=0.039$); however, no significant difference was observed between the two disciplines for patients with Stage IV NSCLC. Of note, the presence of a multidisciplinary clinic improves the use of clinical pathways for treatment of Stage III/IV NSCLC ($p=0.035$). However, no significant association was observed

between the frequency of use of clinical pathways for patients with unresectable advanced-stage tumors and program type, region, and provision of incentives.

Regarding post-treatment care, compared with 44.5 percent of radiation oncologists, 89.7 percent of medical oncologists were “familiar” or “very familiar” with irAE guidelines. Notably, approximately one-third (30 percent to 41 percent) of radiation oncologists and medical oncologists indicated that standard processes, including completion of forms at each visit or reporting symptoms on the portal regarding irAEs, nurses scheduling visits to assess irAEs, and nurses following up with patients and inquiring about irAEs, were followed.

Results: Barriers to the Management of Advanced NSCLC

Thoracic surgeons and radiation and medical oncologists indicated that there were several barriers to the optimal management of patients with Stage III/IV NSCLC. More radiation oncologists vs. respondents from other disciplines, respectively, suggested that lack of patient interest in lung cancer screening (46.1 percent vs. 33.4 percent; $p=0.045$); cost of diagnosis and/or staging (43 percent vs. 32 percent; $p=0.011$); biopsy tissue handling, storage, and transport (63.1 percent vs. 50 percent; $p=0.047$); and improper communication of test results (71.6 percent vs. 59.6 percent; $p=0.029$) had minimal impact on the management of patients with advanced NSCLC. Moreover, a higher proportion of radiation oncologists vs. respondents from other disciplines (56.3 percent vs. 42.3 percent; $p=0.006$) indicated that lack of coverage and reimbursement of biomarker testing could have had some impact on the care of patients. Additionally, more thoracic surgeons vs. other respondents indicated that patients refusing biopsy or other tests could have had some impact (50.7 percent vs. 36.7 percent; $p=0.039$), whereas biopsy tissue handling, storage, and transport (17.9 percent vs. 9.8 percent; $p=0.027$) and accurately interpreting biomarker test results (19.1 percent vs. 6.4 percent; $p<0.001$) had a significant impact on NSCLC care. Alternatively, according to a higher proportion of medical oncologists vs. respondents from other disciplines, biopsy tissue handling, storage, and transport (47.2 percent vs. 33.8 percent; $p=0.018$) had some impact on NSCLC care (see Table 3, page 80).

Discussion

The national quality survey performed across several U.S. cancer program types provides important insights into the different perceptions and practice patterns of thoracic surgeons and medical and radiation oncologists for NSCLC care management. Overall, 47 percent of respondents were from these three disciplines, of which, 60 percent treated more than 50 patients annually, with almost one-third of all patients with Stage III or

IV of the disease. Notably, thoracic surgeons and medical and radiation oncologists “occasionally” to “frequently” engaged in shared decision-making. Of note, 55 percent to 63 percent of medical and radiation oncologists indicated that 5 percent to more than 20 percent of patients with unresectable Stage III and Stage IV NSCLC refused initial first-line treatment, necessitating shared decision-making and patient-primary care provider (PCP) communication. Further, some medical and radiation oncologists indicated that a high number of their patients who could be prescribed concurrent chemoradiation therapy were treated with chemotherapy or radiotherapy alone. Notably, medical oncologists were more likely to define tumors as unresectable based on mediastinal nodal metastases confirmed by biopsy compared with thoracic surgeons, suggesting that resectability protocols and a multidisciplinary approach are essential to ensure all patients receive optimal and equitable care.

Of note, 81.3 percent of respondents indicated that programs in rural regions did not have a specific protocol, and the presence of multidisciplinary clinics positively correlated with the use of resectability protocols patients with Stage III disease. Moreover, these clinics improved the use of clinical pathways. However, the survey revealed several barriers to care delivery, further emphasizing the need for standardizing the quality of care.

Medical oncologists were significantly more familiar with irAE guidelines vs. respondents from other disciplines. Moreover, only one-third of medical and radiation oncologists indicated that an irAE protocol was followed, highlighting the need for increased awareness and standardization of processes.

Shared decision-making ensures that the decisions made are evidence based and aligned with patient preference.¹⁸ Benefits associated with shared decision-making include enhanced patient satisfaction, improved treatment adherence and outcomes, and decreased healthcare costs.^{19,20} This survey indicated that thoracic surgeons and medical and radiation oncologists “occasionally” to “frequently” participated in shared decision-making.

A randomized controlled trial reported that training medical oncologists on shared decision-making processes improved information provision skills, response to patient emotions, and patient decisions, eventually enhancing patient-centered care.²¹ The quality of communication affects patient satisfaction and decision-making and addresses patient distress.²² Additionally, implementation of shared decision-making using decision aids could improve the proportion of lung cancer screening, consequently improving prognosis.²³ Interestingly, respondents from all disciplines equally understood patient treatment goals, and the highest engagement score was associated with shared decision-making for tailoring care plans according to patient preference, followed by use of decision aids.

Stage III NSCLC is highly heterogeneous and associated

with poor prognosis; therefore, a patient-centered management approach is critical.²⁴ Additionally, data suggest that a trimodal therapy approach involving surgical intervention, radiotherapy, and chemotherapy demonstrates a survival benefit and improved rates of locoregional recurrence compared with a bimodal approach without surgery.^{25,26} However, treatment decisions should be tailored to individual patient needs. According to the recent NCCN and European Society for Medical Oncology guidelines, prior to treatment, it is important to carefully evaluate the nodal status using invasive staging techniques, such as EBUS-guided procedures, and to consult a multidisciplinary team that includes a thoracic surgeon.^{9,27} While some tumors with N2 nodal disease may be resectable, these patients warrant careful multidisciplinary assessment and staging,^{9,27} and although surgical resection is not recommended for patients with N3 nodal disease, pathological confirmation is necessary.^{9,27} Decisions for the management of Stage III NSCLC require expertise and consideration of patient preferences; thus, a multidisciplinary approach is paramount.²⁴

A retrospective study indicated that multidisciplinary clinics support enhanced adherence to clinical pathways and ensure accurate mediastinal staging, thereby improving median overall survival.²⁸ Similarly, this survey suggested that the presence of multidisciplinary clinics significantly improved the use of clinical pathways for treatment of Stage III/IV NSCLC. Therefore, a multidisciplinary approach involving thoracic surgeons and medical and radiation oncologists is essential.²⁴ However, 41 percent of cancer programs did not have a multidisciplinary clinic.¹⁷

Additionally, this survey indicated a discrepancy in defining resectable vs. unresectable tumors across program types for thoracic surgeons and medical oncologists. Presence of a standard protocol for unresectable tumors could help overcome inconsistency in the treatment of patients with Stage III NSCLC. However, most program types in rural regions did not have a resectability protocol. Notably, this survey indicated that the presence of multidisciplinary clinics positively correlated with the presence of resectability protocols, further highlighting the importance of multidisciplinary teams in the management of Stage III NSCLC.

NCCN guidelines recommend the use of concurrent chemoradiation therapy followed by immunotherapy for unresectable Stage IIIA patients with positive mediastinal lymph nodes and Stage IIIB patients with positive ipsilateral and contralateral mediastinal lymph nodes.⁹ In concordance with the guidelines, medical and radiation oncologists preferred the use of concurrent chemoradiation therapy over chemotherapy or radiotherapy alone for patients with Stage III NSCLC; however, a small proportion of medical and radiation oncologists also indicated that more than 50 percent of patients were treated with chemotherapy or radiotherapy alone. The variation in

treatment approach emphasizes the importance of guideline familiarity, education and awareness, and the presence of standard protocols or clinical pathways to ensure consistency in patient care. The fear of additive effects of concurrent chemoradiation therapy often prescribed could have contributed to patients refusing initial treatment, consequently necessitating shared decision-making and communication of risks/benefits to patients for optimal outcomes.

Immune checkpoint inhibitors have revolutionized the treatment of NSCLC; however, the benefits are associated with a spectrum of adverse events owing to the difference in mechanism of action compared with other systemic therapies.²⁹ Occurrence of irAEs is associated with improved clinical benefit, progression-free survival, and overall survival.^{30,31} Although discontinuation of immunotherapy could alleviate irAEs, it could also result in poor patient outcomes; cautious management of irAEs could maximize clinical benefit.³⁰ Therefore, it is imperative that disciplines involved in cancer care are aware of the guidelines for the management of irAEs. More than 50 percent of radiation oncologists were unfamiliar or somewhat familiar with the irAE guidelines, suggesting a need for further education. Additionally, two-thirds of the medical and radiation oncologists indicated noncompliance with important procedures to assess irAEs in cancer programs; PCP education and implementation of irAE protocols could resolve this issue. Moreover, a multidisciplinary approach could facilitate timely input and opinions from experts, thereby ensuring an informed and streamlined mode of irAE management.³² Furthermore, multidisciplinary teams could facilitate early detection and intervention of irAEs, ensuring optimal patient management and outcomes.³³

In addition, this survey identified several barriers encountered by thoracic surgeons and medical and radiation oncologists in the management of patients with advanced NSCLC. A barrier faced by all three disciplines was biopsy tissue handling, storage, and transport. In the era of personalized treatment, biopsy samples should be handled judiciously for appropriate histopathological and molecular analysis, thereby optimizing diagnosis, staging, and treatment planning, consequently improving patient management and prognosis.³⁴ Moreover, interpretation and communication of biomarker results were perceived as barriers by thoracic surgeons and radiation oncologists, respectively. Tumor board meetings and multidisciplinary clinics that facilitate communication between medical oncologists and surgeons could help to overcome this barrier.³⁵ Furthermore, some or minimal impact was caused by patients refusing to undergo biopsy or other tests, lack of coverage of and reimbursement for molecular tests, lack of patient interest in screening, and cost of tests. Adoption of shared decision-making could improve patient confidence and management in these areas.

To the best of the authors' knowledge, this was the largest health-based survey performed among U.S. cancer programs to date. The survey included a diverse array of care delivery settings, structures of care, systems, staffing, and a robust process of development. However, the survey had a few limitations, such as the absence of cognitive interviews with a demonstrative cohort before study initiation, lack of validation of self-reported data, and lack of a direct link between multidisciplinary teams and clinical care delivery and outcomes. Additionally, discipline-based analyses reduced the sample size. Therefore, further studies are required to validate the self-reported data and explore the relationship between patient outcomes and cancer care delivery.

This discipline-specific analysis provides an overview of the perceptions and differences in management protocols followed by thoracic surgeons and medical and radiation oncologists across various U.S. cancer programs. This survey

highlights multiple opportunities to improve screening, diagnosis, and treatment of patients with advanced NSCLC. Notably, the engagement of thoracic surgeons and medical and radiation oncologists in multidisciplinary clinics and shared decision-making could standardize patient management and enhance quality of care.

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Table 1. Demographic Data of Thoracic Surgeons, Radiation Oncologists, and Medical Oncologists

Parameter	Thoracic Surgeons n/N (%)	Radiation Oncologists n/N (%)	Medical Oncologists n/N (%)
Respondent number	72/639 (11.3)	114/639 (17.8)	114/639 (17.8)
Region			
Urban	45/72 (62.5)	65/114 (57.0)	64/114 (56.1)
Suburban	24/72 (33.3)	39/114 (34.2)	38/114 (33.3)
Rural	3/72 (4.2)	10/114 (8.8)	12/114 (10.5)
Program Type			
CCCP	4/72 (5.6)	12/114 (10.5)	18/114 (15.8)
CCP	11/72 (15.3)	21/114 (18.4)	23/114 (20.2)
INCP	6/72 (8.3)	2/114 (1.8)	10/114 (8.8)
ACAD	21/72 (29.2)	15/114 (13.2)	18/114 (15.8)
NCIP	12/72 (16.7)	40/114 (35.1)	7/114 (6.1)
NCIN	2/72 (2.8)	2/114 (1.8)	0/114 (0.0)
VACP	0/72 (0.0)	2/114 (1.8)	0/114 (0.0)
HACP	4/72 (5.6)	5/114 (4.4)	7/114 (6.1)
FCCP	3/72 (4.2)	12/114 (10.5)	10/114 (8.8)

ACAD = Academic Comprehensive Cancer Program; CCP = Community Cancer Program; CCCP = Comprehensive Community Cancer Program; FCCP = Free Standing Cancer Center Program; HACP = Hospital Associate Cancer Program; INCP = Integrated Network Cancer Program; NCI = National Cancer Institute; NCIN = NCI-Designated Network Cancer Program; NCIP = NCI-Designated Comprehensive Cancer Center Program; VACP = Veterans Affairs Cancer Program

Table 2. Association Between the Primary Definition of Unresectability and Presence of a Multidisciplinary Clinic

THORACIC SURGEON

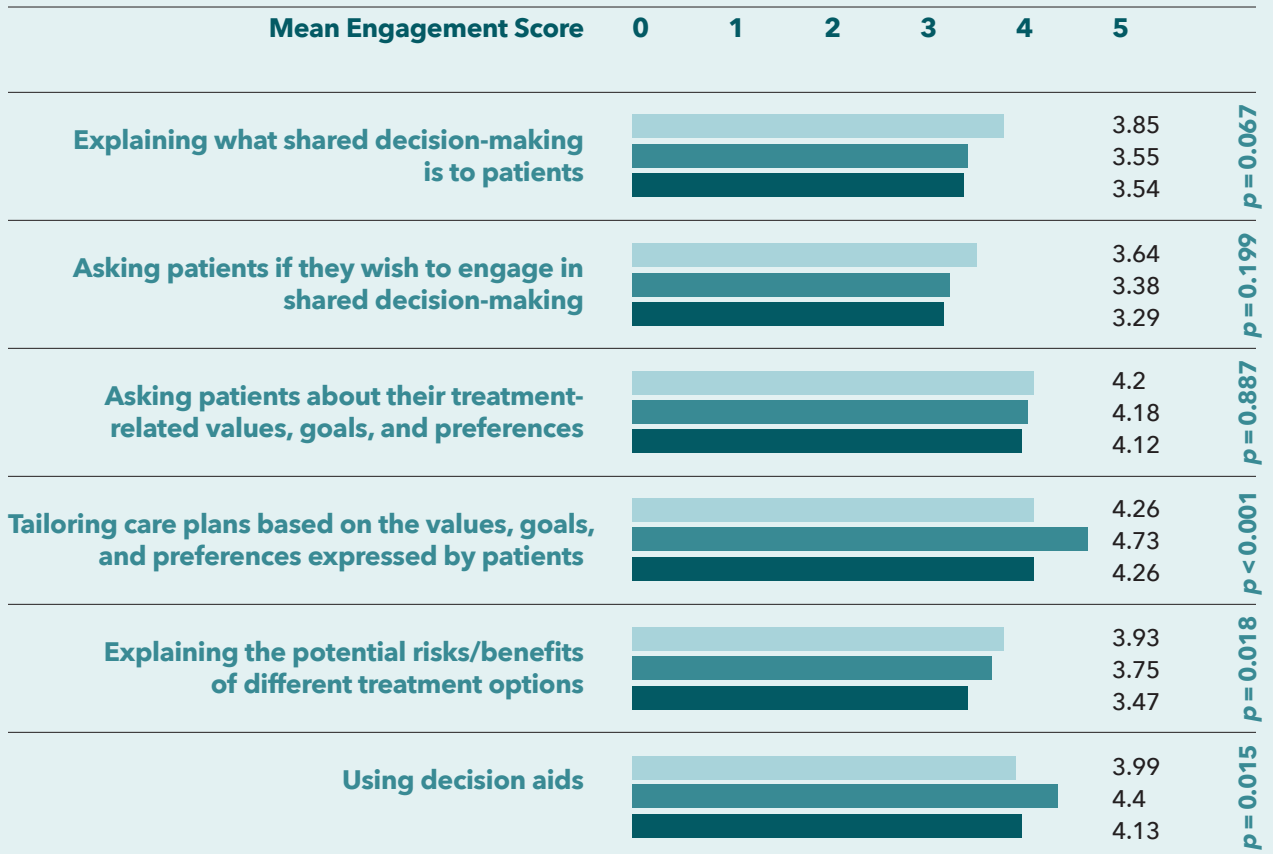
Parameter to Define Unresectable Tumors	Unresectability Defined by the Following Parameters n/N (%)		
	Presence of MDC	Absence of MDC	Significance
Suspected mediastinal nodal metastases	12/12 (100.0)	0/12 (0.0)	<i>p</i> =0.035
CT or PET/CT evidence of mediastinal nodal metastases	18/25 (72.0)	7/25 (28.0)	<i>p</i> =0.522
Mediastinal nodal metastases confirmed by biopsy	27/35 (77.1)	8/35 (22.9)	<i>p</i> =0.884
Low-volume single nodal station ipsilateral nodal metastases	10/10 (100.0)	0/10 (0.0)	<i>p</i> =0.058
Low-volume multi-station ipsilateral nodal metastases	13/16 (81.3)	3/16 (18.8)	<i>p</i> =0.604
Bulky multi-station ipsilateral mediastinal nodal metastases	32/41 (78.0)	9/41 (22.0)	<i>p</i> =0.703
Contralateral mediastinal nodal metastases	38/51 (74.5)	13/51 (25.5)	<i>p</i> =0.558

MEDICAL ONCOLOGIST

Parameter to Define Unresectable Tumors	Unresectability Defined by the Following Parameters n/N (%)		
	Presence of MDC	Absence of MDC	Significance
Suspected mediastinal nodal metastases	22/28 (78.6)	6/28 (21.4)	<i>p</i> =0.032
CT or PET/CT evidence of mediastinal nodal metastases	34/53 (64.2)	19/53 (35.8)	<i>p</i> =0.574
Mediastinal nodal metastases confirmed by biopsy	43/74 (58.1)	31/74 (41.9)	<i>p</i> =0.326
Low-volume single nodal station ipsilateral nodal metastases	8/13 (61.5)	5/13 (38.5)	<i>p</i> =0.992
Low-volume multi-station ipsilateral nodal metastases	12/22 (54.5)	10/22 (45.5)	<i>p</i> =0.462
Bulky multi-station ipsilateral mediastinal nodal metastases	40/68 (58.8)	28/68 (41.2)	<i>p</i> =0.491
Contralateral mediastinal nodal metastases	42/70 (60.0)	28/70 (40.0)	<i>p</i> =0.698

CT = computed tomography; MDC = multidisciplinary clinic; PET = positron-emission tomography

Figure 1. Frequency of Shared Decision-Making Engagement

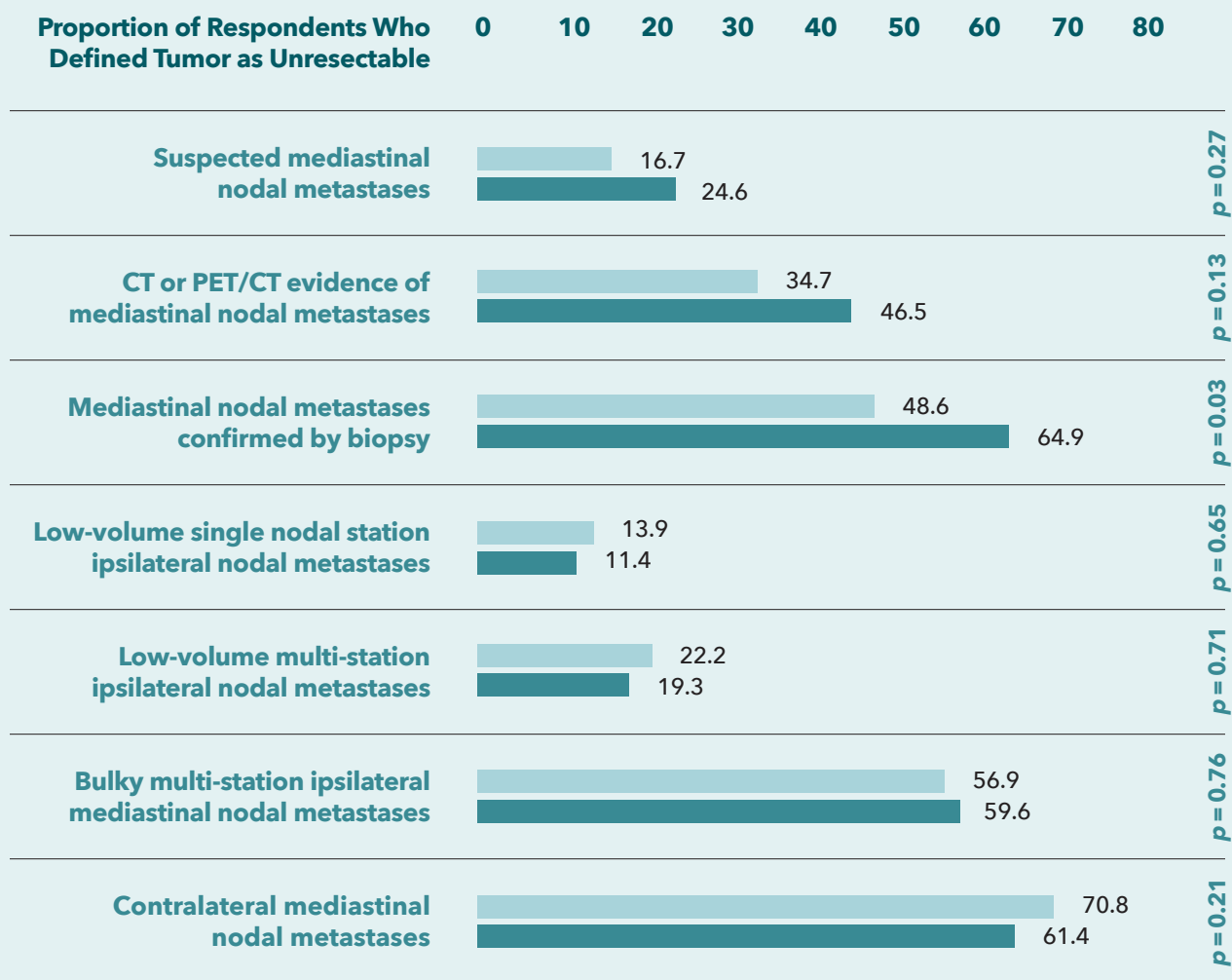


Score indication:

- 1 – Never
- 2 – Rarely
- 3 – Occasionally
- 4 – Frequently
- 5 – Almost always

- Thoracic Surgeons
- Radiation Oncologists
- Medical Oncologists

Figure 2. Comparison Between Thoracic Surgeons and Medical Oncologists in the Primary Definition of Unresectability*



*p-values represent the association between perception of thoracic surgeons and medical oncologists in defining unresectability.

CT = computed tomography; PET = positron-emission tomography

- Thoracic Surgeons
- Medical Oncologists

Table 3. Challenges Faced by Thoracic Surgeons and Medical and Radiation Oncologists in the Management of Advanced NSCLC

Discipline	Minimal Impact	Some Impact	Significant Impact
Thoracic Surgeons		Patients refusing biopsy or other tests	Biopsy tissue handling, storage, and transport Interpretation of biomarker results
Radiation Oncologists	Lack of patient interest in screening Costs Biopsy tissue handling, storage, and transport Improper communication of test results	Coverage and reimbursement of biomarker testing	
Medical Oncologists		Biopsy tissue handling, storage, and transport	

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A publication from the ACCC education program, "Fostering Excellence in Care and Outcomes in Patients with Stage III and IV NSCLC." [Learn more at acc-cancer.org/NSCLC-care-delivery](https://acc-cancer.org/NSCLC-care-delivery) or scan this QR code.

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action

Highlights from the ACORI Call to Action Summit



In 2021 the Association of Community Cancer Centers launched the ACCC Community Oncology Research Institute (ACORI), which is building on ACCC's existing mission to achieve equitable cancer care for all patients by forming key community partnerships. As part of this mission, ACCC hosted the ACORI Call to Action Summit, a two-day virtual event held Sept. 13-14, 2021.

The summit brought together a diverse group of stakeholders—including community oncology professionals, research team members, patient advocates and advocacy groups, clinical trial sponsors, industry leaders, research networks, cooperative groups, and government and regulatory agencies—to explore practical ways to strengthen and diversify oncology clinical trials.

In opening the packed agenda, Michaela Marchi—a singer, songwriter, cancer survivor, and patient advocate—shared her powerful story about her lifelong experience with cancer. Of Pueblo, Filipino, and Italian descent, Marchi (along with most of her family) has Lynch syndrome (also known as hereditary non-polyposis colorectal cancer), and she was diagnosed with Stage IV colon cancer in 2016. With a long family history of cancer, Marchi was the first of three generations to survive after diagnosis. She credits her survival to taking it upon herself to independently identify and enroll in a clinical trial targeting patients with Lynch syndrome diagnosed with Stage IV colon cancer. Marchi received immunotherapy, and her tumors disappeared within a year. Since then, Marchi has dedicated her life to advocating for patients who traditionally do not have access to clinical trials and giving them the education necessary to participate in trials. Through her sobering tale, Marchi articulated the mission of the summit: to understand the experiences of historically disadvantaged communities and build effective relationships with them to further cancer research and health equity.

Representation

ACCC gathered expert panelists who discussed the current research landscape and the need to create and run more inclusive clinical trials. “The diversity of trials must represent the diversity of cancer,” said Sybil Green, JD, RPh, MHA, the diversity and inclusion officer at the American Society of Clinical Oncology. Green laid out the current oncology and clinical trial landscape:

- Four percent to six percent of patients on clinical trials are Black.
- Three percent to six percent of patients on clinical trials are Latinx.
- American Indians experience the highest mortality rates compared to all other groups.

Linda Burhansstipanov, MSPH, DrPH, president of Native American Cancer Initiatives, and Rodney Haring, PhD, MSW, director of the Center for Indigenous Cancer Research at Roswell Park Comprehensive Cancer Center, both highlighted the many barriers Indigenous communities face regarding access to equitable healthcare (i.e., common misconceptions regarding the use of casino funds and general distrust of western medicine).

“They [Indigenous communities] desperately need partnerships with cancer programs to help,” said Dr. Burhansstipanov. By partnering with Indigenous communities, oncology staff and researchers can target current barriers and build long-term trust. A 2021 *Oncology Issues* article demonstrated how Dr. Haring’s team at Roswell Park Comprehensive Cancer Center has successfully partnered with native populations to guide its clinical research.¹

Similar barriers and needs exist in Black and Latinx communities. Panelists agreed that the largest barrier to equitable representation in cancer clinical trials is not asking traditionally underserved populations to participate in them. For this to happen, oncology staff must have dedicated time to spend with their patients to educate them about clinical trials and invite them to participate. Patients cannot be expected to make informed decisions about participating in clinical trials if they do not understand how these trials work, the travel or costs associated with participation, or how a trial may impact their communities in the long term. Education about clinical trials should be done in layman’s terms to meet patients where they are, and it should be in a patient’s native language. To support these efforts, ACCC developed a digital glossary of clinical research terms that helps establish a standardized understanding across cancer care team members and serves as a tool to improve patient education and encourage shared decision-making conversations. Explore this online tool at acori-glossary.accc-cancer.org.

Duron warns against making any assumptions about patients’ communication preferences. “[Healthcare professionals] need to ask patients what language they prefer, not what language they speak,” she explained.

Building Community Partnerships

In all panel discussions throughout the day, one question repeatedly emerged: How do we build trusting and effective community partnerships to engage marginalized groups in cancer research? Many panelists agreed that each patient’s community is part of their identity, especially those in the Black and Latinx population. For Indigenous groups, Dr. Haring shared that cancer programs and practices need to understand each tribe within their

(Continued on page 85)

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The **ACCC Financial Advocacy Network** is the leader in providing professional development training, tools, and resources that will empower providers to proactively integrate financial health into the cancer care continuum and help patients gain access to high quality care for a better quality of life.

(Continued from page 83)

community, including their long histories, to build relationships with them. Panelists suggested that education should be bi-directional. Patients must be appropriately educated about their disease and potential clinical trials, and staff must be educated about the communities they wish to engage.

Shonta Chambers, MSW, executive vice president of Health Equity and Engagement at the Patient Advocate Foundation said that researchers “cannot separate a patient from the social context of their community.” That context is key. For example, social determinants of health to consider in disadvantaged populations can include food security, socio-economic status, access to transportation, and so much more. “For community engagement to be successful, it takes time and resources,” said Venus Ginés, MA, P/CHWI, chief executive officer and founder of Día de la Mujer Latina. Panelists identified the need for cancer programs and researchers to engage with communities long before a trial is designed or patients are asked to participate. In doing so, researchers should partner with grassroots organizations within the community that may already have a footprint among community members and/or host community education activities.

In all, the day’s panelists agreed that to achieve true diversity within cancer clinical trials, we must begin before a study or trial is thought of and engage in these communities with the intention to build or restore trust between them and their healthcare providers.

ACCC will publish an executive summary of the summit that will speak on the day’s themes and their usability, feasibility, and degree of potential impact to guide the future of the Institute. Meanwhile, browse resources available in the ACORI Summit Resource Library (accc-cancer.org/ACORI-library), including:

- *All Together Now for Inclusive Cancer Trials*. A program developed in partnership with Stand Up to Cancer, the LUNGevity Foundation, Moffitt Cancer Center, and Platform Q
- The Stand Up to Cancer Resources Toolkit
- National Black Family Cancer Awareness Week #BlackFamCan; Social Media Toolkit for the FDA’s Oncology Center of Excellence Project Community Initiative
- U.S. Cancer Centers of Excellence Strategies for Increased Inclusion of Racial and Ethnic Minorities in Clinical Trials, Regnante et al.
- Promoting Inclusion of Members of Racial and Ethnic Minority Groups in Cancer Drug Development, Lola Fashoyin-Aje, MD, MPH; Julia A. Beaver, MD; Richard Pazdur, MD
- Let’s Tackle the Hidden Real-World Reasons for Poor Clinical Trial Diversity
- FasterCures, Engaging Patients in Research.

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1. Patton A. Center for Indigenous Cancer Research at Roswell Park Comprehensive Cancer Center. *Oncol Issues*. 2021;36(3):22-28.

ACCC Welcomes Its Newest Members

Montrose Memorial Hospital San Juan Cancer Center

Montrose, Colo.

Delegate Rep: Dean Putt, MBA

Website: montrosehospital.com/medical-services/san-juan-cancer-center

Baptist Health Corbin

Corbin, Ky.

Delegate Rep: Lisa Gomez, RN

Website: baptisthealth.com/corbin

Parkland Hospital, Parkland Cancer Program

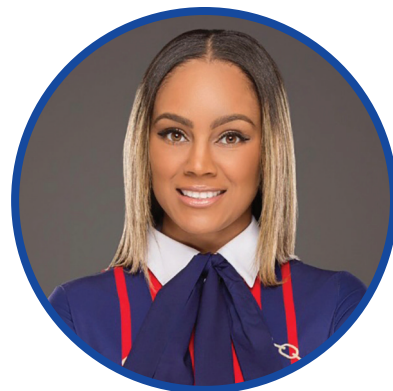
Dallas, Tex.

Delegate Rep: UMBER DICKERSON, MPH

Website: parklandhospital.com/cancer

Put Yourself First— Words to Live By

BY DR. CHEYENNE BRYANT



As a practicing psychology expert of 13 years and a life coach, I can tell you just how important it is to take care of yourself and your mental health before you can truly provide care to others. Put yourself first: this mantra is especially important today as we continue to grapple with the implications and fallout from the COVID-19 global pandemic.

A Little About Me

I entered psychology shortly after determining that law was not a fit for me and my future. I sought God's guidance during this transition, as I began to understand my traumas, broken pieces, and pain pockets. I learned new things about myself and my brokenness. God taught me how to take those broken pieces and make complete peace from them, a state which I call God's Peace. This experience revealed to me my true self and my purpose: pursuing psychology to help others find peace in their lives.

It was not until I got to this space of peace that I learned it is possible for people to live a quality life and have peace of mind even after experiencing turmoil or hardships—whether that hardship is a health condition, a divorce or painful breakup, or childhood trauma. Some of my own turmoil stemmed from my childhood. My maternal grandmother has been fighting cancer since I was a little girl. She was first diagnosed and treated for stomach cancer, which later recurred as breast and cervical cancer, respectively. She's experienced cancer and its treatments on an ongoing basis through

chemotherapy, radiation, and surgery. The doctors originally gave her 5 years to live, which was about 25 years ago today. She is now 76 years old and a total powerhouse! Recently, my paternal grandmother was diagnosed with colon cancer. So the experience of cancer really hits home for me.

As a practicing psychology expert, I help people create a peace plan using a hybrid method of therapy and coaching that I have developed. (Learn more at drbryantinstitute.com.) I work to help people get to where they want to be in life in a healthy, effective manner. A large portion of this work is to first understand ourselves—our traumas and triggers—so that we can become more empowered in our daily lives. Caring for yourself and your mental health first is especially important for those in healthcare. Your mental health needs to be at 100 percent, so you can provide the quality care your patients need and deserve.

The Trauma of Oncology

Cancer is more than just a physical disease that requires medical treatment; it impacts the mind, body, and spirit. Cancer is also a condition without a known cure—despite promising treatments that continue to be discovered. And sometimes, after finishing treatment, cancer returns in one way or another, like in the case of my grandmother. For anyone diagnosed with cancer, helping care for someone with cancer or providing treatment for cancer can be mentally and physically draining.

Working day after day in the field of oncology and hematology can be traumatic.

Cancer care team members often experience secondary and third-level trauma. When patients ask questions like, "Am I going to be okay?" or make statements like, "I'm feeling sad, depressed, and lonely," some cancer care team members may feel as though they are acting as therapists or mental health professionals when they are not trained to do so.

I have nurse and physician clients who treat both patients with cancer and those with COVID-19. These healthcare professionals must be able to deliver what the Institute for Healthcare Improvement (ihi.org) calls the right care to the right person at the right time.¹ But this quality of care is challenging. And when my nurse and physician clients come into their sessions, they often share that it's the job that is traumatic and weighing on their hearts and minds. I advise these clients—and every healthcare professional—to focus on self-care and their own mental health and well-being first so that they can provide that to their patients as well.

Because those words are often easier said than done, here are a few actionable tips to help.

Tip 1. Consult with a Mental Health Professional

Human life is like a garden. Through therapy, we take inventory of our garden and nurture or grow the positive, healthy aspects of our life while simultaneously pruning or weeding out what does not work for us or what is no longer serving us. A mental health professional can help you through

(Continued on page 88)



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(Continued from page 86)

this “gardening” process. I advise people to avoid the stigma that you should only seek out help when you have “issues.” Instead, embrace therapy as a safe space and a place to go to build up your mental health and resiliency. By being proactive with your mental health and well-being, you will have the tools and a go-to coach or therapist ready to help you meet challenges or adverse circumstances (like a global pandemic) in a healthy, effective manner. A mental health professional can also play a preventative role—especially for individuals who may have never experienced anxiety, depression, or isolation pre-COVID-19.

Tip 2. Find a Place to Debrief and Exchange Emotions

It should be mandatory that every cancer program or practice provides a place for their staff to mentally debrief. This should be a space where staff can have a comfortable 30 minutes on their own to relax, sit with their emotions and feelings, and (hopefully) recharge. Debriefing can also be effective when time is shared with others. Colleagues are there for support and to show you that you are not alone. Whatever you are feeling, trust me, others are also feeling it. By coming together as a group to debrief about your day or week, cancer care team

members can learn from each other’s coping mechanisms or tips and tools to improve resiliency and well-being. There is immense power in exchanging emotions and processing feelings with others who understand your professional work and experiences.


Tip 3. Take Up Journaling

Get yourself a journal to capture your emotions, thoughts, and feelings in words. The benefits of journaling are well documented in medical and scientific literature. Below your colleagues at Intermountain Healthcare—an ACCC member program—share five powerful health benefits of journaling:²

1. Journaling reduces stress.
2. Journaling improves immune function.
3. Journaling keeps memory sharp.
4. Journaling boosts mood.
5. Journaling strengthens emotional functions.

Tip 4. Embrace Your Humanity

Do not put on a cape and think that you must be Superman or Superwoman. That mindset can break you down and burn you out. When you burn out and your immune system is compromised or you get sick, you cannot do your job and you even may begin to feel burdened by your work. Almost the

worst thing we can do as healthcare professionals is to not take care of ourselves. If you take away only one message from this article, it should be this one: “It is okay to ask for and receive help.” As healthcare professionals and healers, we must be reminded that there is power in asking for and receiving help. We are not meant to do it all on our own. 

Dr. Chyenne Bryant is a psychology expert, a life coach, president of the National Association for the Advancement of Colored People (NAACP) Branch No. 1069, founder of the Dr. Bryant Institute, founder of the Dr. Bryant Foundation, author, motivational speaker, community activist, host, and brand ambassador.

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