Pioneering a Cancer Program for the Future

Novel approaches to optimize the patient experience

MEDICAL CARE

HEALTH

BY MONICA DENAULT, LILI HAY,
MATT STURM, AND JESSICA TURGON

Achieving the Cancer Moonshot goal[1] of reducing the national cancer death rate by 50% over the next 25 years will require improved interventions and increased access to cancer care. Emerging research is fostering paradigm-altering improvements to cancer diagnosis and treatment, and innovative technologies are expanding access to cancer services to broader patient populations. At the same time, many programs face capacity and resource constraints—which will continue to rise as demand for cancer services grows in the coming years. The aging US population is predicted to drive an increase in cancer incidence of almost 50% by 2050.[2]

Many cancer programs are facing significant challenges to maintaining access to care. By focusing on core operational imperatives, cancer programs can deliver advanced care and expand access to that care while maintaining a focus on the patient experience.

As cancer programs look to the next decade, administrative and clinical leaders will need to implement novel approaches to cancer care to support increased patient access, improved operational efficiency, and equity for all patients. While strong, subspecialized physicians and excellent clinical outcomes remain fundamental to maintaining a competitive cancer program, this article does not address those topics, as it is assumed that cancer programs have focused their development efforts in those areas over the past 10 to 20 years. Instead, this article explores 4 pillars for creating a differentiated patient experience:

1. Optimization of performance to increase patient access.
2. Incorporation of strong patient navigation services across the program.
3. Integration of digital health tools into the patient care experience.
4. Dedicated focus on improving health equity.

While each pillar must be understood on its own, cancer leaders who recognize how the pillars overlap can position their programs to reap the full rewards of investing in these initiatives—ensuring their programs can continue bringing cutting-edge, patient-centric care to their communities and drive financial improvement for their organization.

> Given the complexities associated with cancer care, there are 2 key patient navigator roles that cancer programs should prioritize to coordinate care for patients throughout the oncology care continuum: the new-patient coordinator and the clinical nurse navigator

Patient Access

The Problem

In addition to expecting high-quality cancer care, patients increasingly want rapid access to appropriate oncology specialists following diagnosis and the ability to initiate treatment quickly. Many high-performing programs strive to arrange new patient appointments within 5 to 7 calendar days, or even less (eg, best-in-class breast programs see new patients within 24 to 48 hours).

These shifting patient experience expectations around access present increasing challenges for cancer programs that are already facing high patient volumes, staffing limitations, and/or physical footprint restrictions. For many patients, the ability to access care quickly and seamlessly is a key factor in determining where to seek care. Cancer programs without well-designed patient access processes are at a competitive disadvantage.

In today's resource-constrained operating environment, providers need strategies to expand access and optimize capacity without adding new space, chairs, or staff so that they can more effectively serve their patient populations. Patient and provider priorities should also be considered when designing and implementing operational changes within a clinical program. Additionally, alternative care strategies

need to be considered as methods of using existing infrastructure in different ways.

Solutions

To improve new-patient access, programs need to prioritize capabilities that will support a seamless patient experience while decreasing time to first appointment. Key among these capabilities is refining referral intake processes while understanding the overall demand for new-patient appointments, enhancing program capacity management to meet that demand, and optimizing provider work standards to free up capacity and enable operational efficiency.
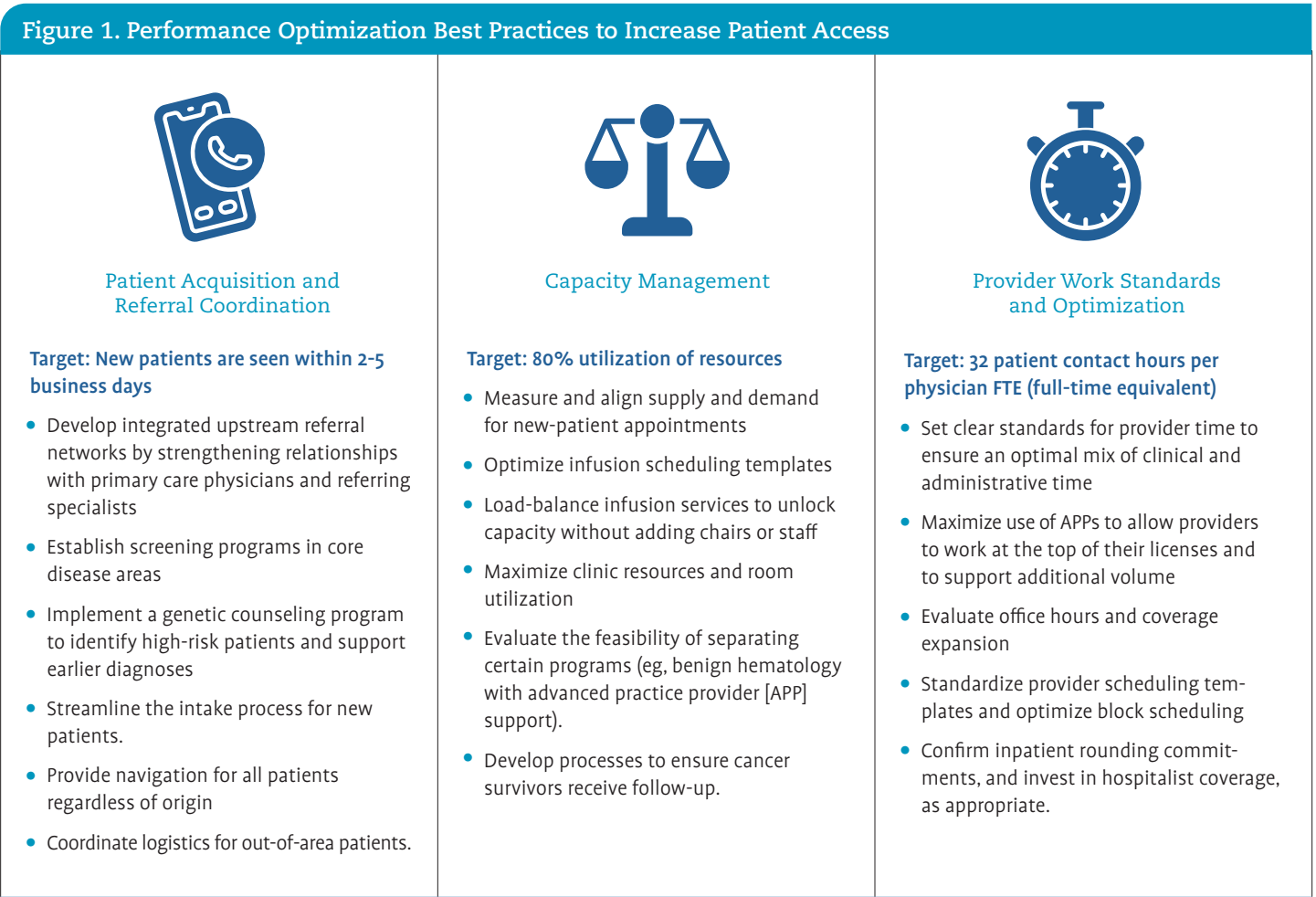
High-performing programs approach these 3 issues using standardized processes that allow all providers to work at the top of their licenses while reducing variation in workload across individual providers. Once providers' available time is optimized, capacity management and clinical coordination efforts can be more effectively implemented. Best practices, such as those found in Figure 1, can help increase capacity without adding resources, which will in turn reduce wait times for new patients.

Along with optimizing referral coordination, capacity management, and provider work standards, ensuring that patients utilize the right care setting will improve overall patient access. Oncology urgent care centers and home infusion programs are 2 methods for utilizing existing program infrastructure in different ways (Figure 2).

Oncology Urgent Care Centers

Providing on-demand access to the right care setting for patients is key to both reducing health care costs and meeting patient experience expectations. Three of the most common frameworks for oncology urgent care centers include:

- Dedicated space in a medical office building or existing oncology clinic space
- An oncology-specific clinic within an emergency department (ED) that avoids general ED triage and provides oncology-specific emergency care
- A standalone ambulatory clinic that patients can visit directly from home or after visiting the ED if their medical needs do not warrant an inpatient stay.

Figure 1. Performance Optimization Best Practices to Increase Patient Access

Patient Acquisition and Referral Coordination

Target: New patients are seen within 2-5 business days

- Develop integrated upstream referral networks by strengthening relationships with primary care physicians and referring specialists
- Establish screening programs in core disease areas
- Implement a genetic counseling program to identify high-risk patients and support earlier diagnoses
- Streamline the intake process for new patients.
- Provide navigation for all patients regardless of origin
- Coordinate logistics for out-of-area patients.

Capacity Management

Target: 80% utilization of resources

- Measure and align supply and demand for new-patient appointments
- Optimize infusion scheduling templates
- Load-balance infusion services to unlock capacity without adding chairs or staff
- Maximize clinic resources and room utilization
- Evaluate the feasibility of separating certain programs (eg, benign hematology with advanced practice provider [APP] support).
- Develop processes to ensure cancer survivors receive follow-up.

Provider Work Standards and Optimization

Target: 32 patient contact hours per physician FTE (full-time equivalent)

- Set clear standards for provider time to ensure an optimal mix of clinical and administrative time
- Maximize use of APPs to allow providers to work at the top of their licenses and to support additional volume
- Evaluate office hours and coverage expansion
- Standardize provider scheduling templates and optimize block scheduling
- Confirm inpatient rounding commitments, and invest in hospitalist coverage, as appropriate.

FTE=full-time equivalent.

Figure 2. Benefits to 2 Common Alternative Payment Models

Oncology Urgent Care Centers
- Address adverse effects of treatment and symptoms before they become significant issues
- Reduce unnecessary hospital admissions
- Avoid exposure to the general population for immunocompromised patients
- Provide a venue for unscheduled visits, without disrupting the flow of outpatient clinics.

Home Infusion Programs
- Improve patient access, particularly for patients who may have challenges related to comorbidities, cancer-related symptoms, or transportation limitations
- Address clinic capacity issues by providing treatment in an alternative setting.

In addition to establishing the right clinical setting and structure for an oncology urgent care center, the center should offer patients:
- A way to communicate with a triage nurse who can direct them to the proper setting for their needs
- Same-day and/or walk-in visits and extended hours of operation
- Access to oncologists familiar with cancer treatment-related issues and adverse effects (AEs)
- Ability to treat common AEs (eg, hydration) on site.
- Alignment with value-based care strategies that reduce ED or inpatient admissions to create a supportive care environment.

Home Infusions

Although chemotherapy infusions have traditionally been delivered in a clinical setting, certain therapies can be delivered to patients at home. This approach has been demonstrated to improve patient satisfaction and has the potential to create financial savings for both patients and health systems.[3,4] Patients who have demonstrated tolerance of a treatment in an infusion center are candidates for home infusion.[5] Treatments can include intravenous and subcutaneous medications, as well as biologics, which are administered either by a nurse or by the patient themselves.[6] Nurses also provide patients with education, apply dressings to the infusion site, and check for adverse reactions. As a relatively new model for delivering cancer treatment, home infusion programs face several challenges that should be considered during design and implementation, including:
- Regulatory approval and/or state requirements for licensures
- Insurance reimbursement
- Availability of appropriately trained nurses
- Logistical issues related to geography and patient/provider safety
- The need for a high degree of coordination between patients, care teams, home infusion pharmacies, and home health agencies.

### Patient Navigation

The Problem

Cancer is a complex disease that requires multidisciplinary care (Figure 3). What makes it even more challenging is that the care pathway (both the unique care providers required and the sequence of events) varies by patient and is dependent on their clinical diagnosis and treatment plan. This complicates most programs' efforts to implement a standardized set of care coordination protocols for their entire patient population, and therefore, patients often struggle to coordinate care between specialists during their cancer journey. Patient navigation programs are commonly used to bridge this gap and are designed to facilitate a patient-centered care experience by reducing barriers and ensuring access to timely cancer care. These services make the cancer care journey more manageable for patients and their loved ones.

While most cancer programs offer some fragmented patient navigation services, high-performing cancer programs offer a comprehensive patient navigation experience serving all patients, regardless of disease site or geographic location, beginning at the point of intake and continuing through the duration of the patient's cancer journey. There are a variety of areas where enhanced navigation services can buttress existing clinical and operational practices and/or help minimize other patient-specific barriers to care (eg, related to language, income, geography, education) and drive financial improvement for their organization. These services are particularly important for programs to have in place to efficiently manage patients' needs as the demand for cancer services increases.

The Solution

Given the complexities associated with cancer care, there are 2 key patient navigator roles that cancer programs should prioritize to coordinate care for patients throughout the oncology care continuum: the *new-patient coordinator* and the *clinical nurse navigator*. New-

Figure 3. Complexities of Cancer Care
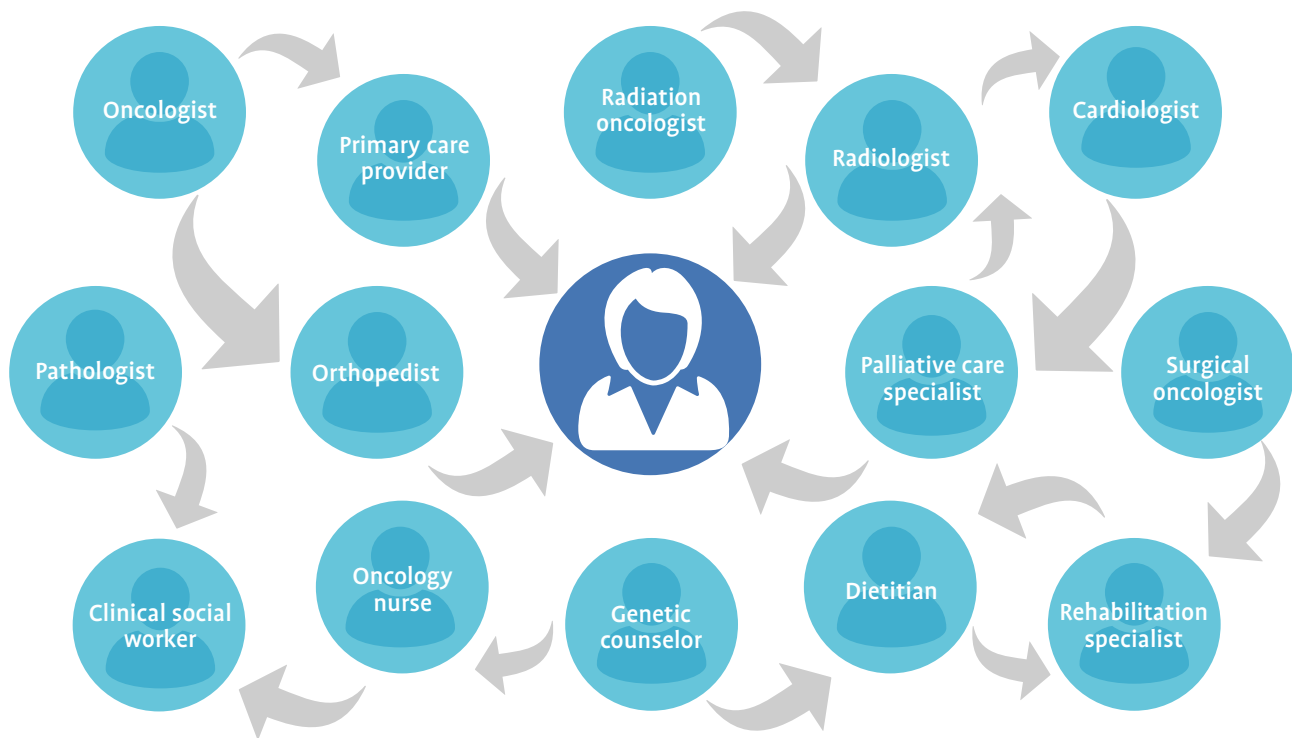
patient coordinators are the first point of contact for all oncology patients. They assist throughout the patient journey and are responsible for scheduling appointments and treatments, managing referrals, and assisting with financial matters. Prior to the first patient visit, these coordinators are responsible for the following duties:
- Ensure patients have the information they need about the location(s) of their appointment(s)
- Help patients complete required documentation, including collecting records required to guide treatment (eg, results of diagnostic testing, such as lab and radiology reports)
- Assist with transportation and parking
- Help identify lodging for patients traveling from out of town
- Facilitate transfer of clinical information to the treatment team
- Help schedule appointments with financial counseling, social work, and other support services.

During cancer treatment, new-patient coordinators are responsible for the below tasks:
- Ensure patients remain connected to support services as needed and assist with scheduling
- Provide individual or family counseling and emotional support
- Connect patients to peer support (cancer support groups).

Once a patient has decided to pursue the treatment plan from their oncologist, the new-patient coordinator will connect the patient to the clinical nurse navigator, who then begins to coordinate appointments with the patient's care team. The clinical nurse navigator has the following duties:
- When possible, accompany patients to initial appointments
- Coordinate diagnostics, procedures, and specialist appointments
- Assess patients' physical, emotional, psychosocial, spiritual, and financial needs
- Initiate referrals to ensure patients are connected with community resources
- Provide patient education
- Assist in arranging treatment closer to home when available and appropriate.

In addition to having capable navigators overseeing patient volume (at a ratio of approximately 200 patients per 1.0 FTE navigator for either the new-patient coordinator or clinical nurse navigator), a number of different components must be in place to ensure the patient navigation program is successful. There must be a strong vision and clearly articulated scope for the program, clarity on roles, robust electronic health record (EHR) documentation tools, and a high level of physician and organizational commitment.

Figure 4. Patient Navigation Performance Metrics

ORDER OF FUNCTIONS	METRIC	DESCRIPTION
Diagnosis	Cancer screening follow-up to diagnostic workup	Number of navigated patients with an abnormal screening referred for a diagnostic workup
	Completion of diagnostic workup	Number of navigated patients with an abnormal screening who completed a diagnostic workup
Treatment and care transitions	30-, 60-, and 90-day readmission rates	Number of navigated patients readmitted to the hospital at 30, 60, and 90 days
	Navigation caseload	Number of navigated patients per month
	Patient retention	Percentage of navigated patients retained for treatment services
	ED utilization	Number of navigated patients who visit the ED per month
	Treatment compliance	Percentage of navigated patients who adhere to institutional treatment pathways
	Clinical trial education	Number of patients educated on clinical trials by the navigator per month
	Diagnosis to treatment	Number of business days from diagnosis (date of pathology result) to initial treatment (first date of treatment)
Patient experience	Patient experience	Patient experience or satisfaction survey results per month
	Patient goals	Percentage of new cancer cases per month for which patient goals are identified and discussed with a navigator
	Caregiver support	Number of caregiver discussions about needs/preferences with a navigator per month
Survivorship and palliative care	Survivorship care plan	Number of navigated patients (curative intent) per month who received a survivorship care plan and treatment summary
	Referrals to support services	Number of navigated patients per month referred to appropriate support service at the survivorship visit
	Palliative care referral	Number of navigated patients per month referred for palliative care services

For individuals responsible for operating the navigation program, there are multiple ways to evaluate its success. Oncology leadership will need to determine the most appropriate performance indicators for their specific program. Performance can be evaluated utilizing metrics in both clinical and nonclinical categories as illustrated in Figure 4.

While the direct return on investment (ROI) is difficult to measure, a strong patient navigation program drives an estimated 10% improvement in patient retention.[8] Other factors to consider when evaluating the ROI for patient navigation include improved patient compliance with treatment plans and reductions in hospital admissions, readmissions, and ED visits.

Digital Health[9]

The Problem

Patients expect to find the same flexibility and ease of navigation in health care as they experience in other industries. Consumers want better products, higher-quality service, and a better overall experience, all enabled by technology. These expectations for seamless and quick access are driving providers to reevaluate their digital capabilities to be as patient-centric as possible.

To achieve this goal, organizations must thoughtfully evolve their use of digital health care tools while understanding that digital trans-

formation is not about simply adopting the latest technology. Cancer programs must carefully consider how they can best utilize digital health tools to drive improvements in patient access, patient experience, care coordination, and program differentiation. Considerations regarding the application of artificial intelligence (AI) should also be evaluated as AI-assisted technologies rapidly enter the healthcare space. These technologies are predicted to become a mainstream tool for providers within the next 10 years.

Solutions

It is crucial to establish a foundation of digital health tools before venturing into more innovative technological capabilities. All cancer programs should have the following 4 patient-centric elements in place today:

- *Integrated telehealth.* Synchronous video visits integrated into the EHR
- *Patient portal access.* Full patient access to the EHR, including the ability to upload and download information
- *Patient communication.* Multiple access points, including phone and portal messaging; coordinated and personalized survivorship communication
- *Triage services.* On-demand digital nurse triage capabilities available through multiple access points.

With these capabilities in place, cancer programs can explore pioneering approaches to digital health that improve the patient experience while automating routine clinical tasks in a manner that allows providers and clinic staff to more efficiently attend to a larger patient population. One crucial digital health application that drives improved patient experiences and reduces the need for unnecessary clinic visits is remote monitoring of patient vitals and symptoms. The continuum ranges from basic electronic patient-reported outcomes (ePROs) to remote monitoring and, ultimately, AI-assisted monitoring solutions. These advanced digital tools enable the gathering and reporting of patient data to the care team and facilitate better symptom management, reduce travel burdens, minimize emergency visits, and improve cancer survival rates.[10]

Although implementing remote monitoring necessitates changes in staff skills, systems, and workflows, introducing ePROs in the short term will help patients adapt to remote monitoring, paving the way for the adoption of more innovative tools. Establishing a strong ePRO capability today will position cancer programs to transition to more advanced remote monitoring (including AI-assisted) solutions as technologies evolve and gain industry approval.

ePROs

ePROs utilize tools such as smartphones and web-based platforms to collect patient-reported data on vital signs, symptoms, and quality of life. Patients provide information about their health status by manually logging information into a system at preplanned intervals, allowing their providers to receive timely data outside of routine clinic appointments. This approach empowers patients to actively participate in their care and has been shown to improve patient outcomes, satisfaction, and compliance with clinical therapies. Additionally, ePROs can enable more timely interventions from clinic staff when serious issues arise.

Remote Monitoring

Remote monitoring involves the use of technology to automatically track a patient's health status. It typically involves the use of wearable devices, Bluetooth-enabled medical devices, or mobile applications that enable real-time collection and transmission of data such as heart rate, weight, blood pressure, or physical activity. In other cases, data are collected and pushed to the clinic on a scheduled basis or downloaded when the patient visits the clinic.

This data collection and transmission process allows healthcare providers to detect any potential issues or changes in the patient's condition and provide timely interventions or adjustments to their treatment plan to reduce adverse treatment-related events, ultimately lessening the need for frequent in-person visits (eg, clinic visits, ED visits, hospital admissions) and improving patient outcomes.

AI-Assisted ePROs and Remote Monitoring

Further into the future, remote monitoring technologies will incorporate AI algorithms to assist providers in making timelier and more data-driven decisions. Unlike humans, AI algorithms can analyze longitudinal patient data in real time, potentially incorporating data from the patient's EHR. This technology enables the identification of trends to support taking preemptive (and remote) measures to avoid adverse events or making rapid adjustments to the patient's course of treatment.

Examples of where AI-assisted technologies are already being tested include:

- CANKADO PRO-React. A digital system of patient-generated daily health documentation and symptom questionnaires that predicts impending adverse incidents at earlier stages and shares the patient-generated data with physicians in real time. This technology also provides recommendations to patients regarding how urgently they should seek medical care.[11]
- BioIntelliSense. A rechargeable sensor that adheres to the chest and passively measures more than 20 vital signs, recording 1440 measurements daily. The AI software component manages, monitors, analyzes, and interprets the daily data points and alerts the healthcare team and patients when the vital signs fall outside personalized ranges.[12]

Economic returns for digital health technology investments are measured through direct and indirect ROI. Direct ROI includes cost reduction or avoidance (eg, through reduced hospital readmissions). Indirect ROI is measured through an increase in the customer lifetime value of a patient driven by 3 factors:

- *More total patients served* (eg, patients switch from competitors, patients are attracted from outside the current market, reduced time to treatment allows for more patients to be treated)
- *More revenue per patient* (eg, fewer appointment no-shows, new digitally enabled services such as genomics counseling, payment reminders to improve collection rates)
- *More time caring for patients* (eg, patient loyalty increases because of high-quality and convenient experience, survival rates improve through consistent care delivery and personalized medicine).

Health Equity

The Problem

Although the US has made tremendous progress in treating cancer in recent decades, advances in detection, diagnosis, and treatment have not benefited all populations equally. Cancer incidence rates and mortality are declining steadily across all population groups; however, disparities across the cancer continuum remain a major public health challenge. People of color and other medically under-served populations continue to bear a disproportionate burden for cancer when compared to White Americans (Figure 5). At a general population level, approximately 40% of cancers are considered preventable, and 60% of patient outcomes are correlated directly with environmental factors and patient behavior[14]—statistics that are closely tied to social determinants of health (Figure 6).

Although social determinants of health factors function upstream from traditional health care interventions, they often have as much, or more, of an impact on health outcomes for individual patients

Figure 5. US Cancer Disparities[13]

American Indian and Alaska Native populations have an **80% higher** incidence rate of kidney cancer.

Individuals living under persistent poverty have a **43.2% higher** mortality rate of stomach cancer.

Individuals living in rural areas have **17% higher** death rates from all cancers combined.

The Black population has **more than double** the mortality rate of multiple myeloma.

77% of tumor samples in the Cancer Genome Atlas are from White populations.

The Native Hawaiian and other Pacific Islanders population has **nearly 3 times** the mortality rate of stomach cancer.
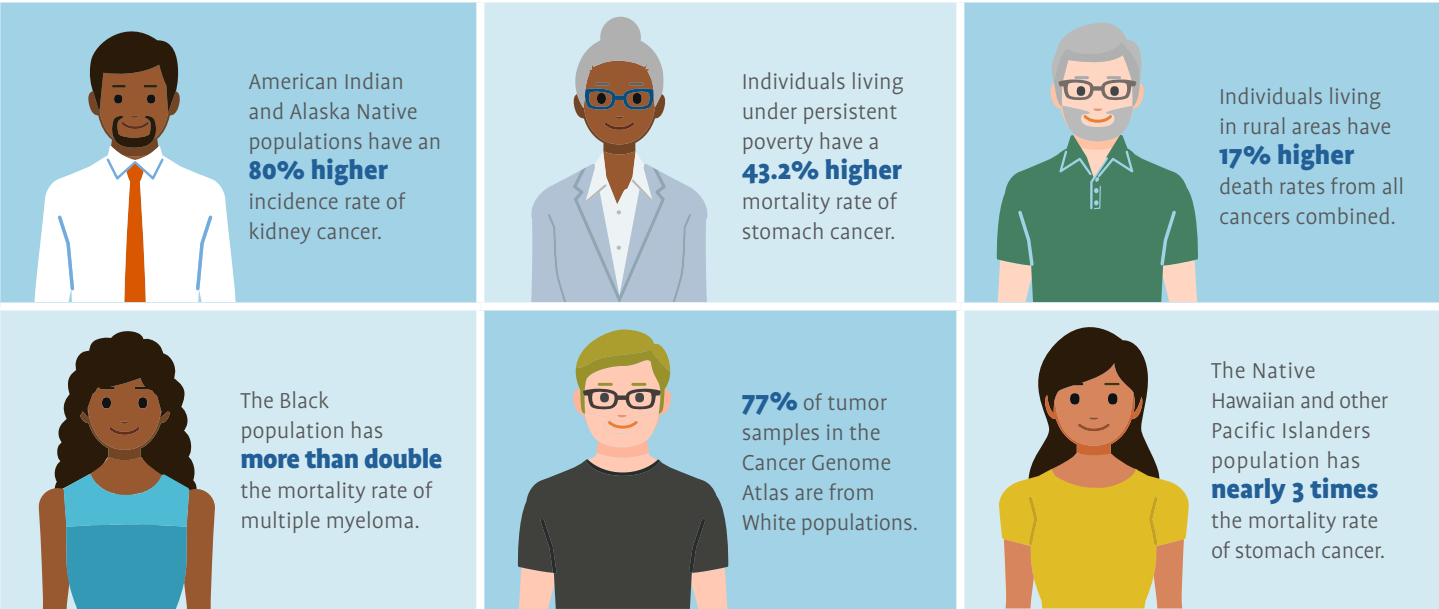
Figure 6. Key Social Determinants of Health[15]

Economic Stability	Neighborhood and Environment	Education	Food	Community, Safety, and Social Context	Health Care System
Factors Driving Health Outcomes					
• Employment • Income • Expense • Medical bill debt support	• Housing • Transportation • Parks • Playgrounds • Walkability • Zip code and geography	• Literacy • Language • Early childhood education • Vocational training • Higher education	• Food security • Access to healthy options	• Social integration • Support systems • Community engagement • Stress • Exposure to violence • Policing	• Health coverage • Provider and pharmacy availability • Access to linguistically and/or culturally appropriate care • Quality of care

Health outcomes: mortality, morbidity, life expectancy, health care expenditures, health status, functional limitations

and communities as the provision of health care services themselves. Accordingly, providers and programs seeking to improve health equity must adopt a comprehensive view of patients and their communities, looking beyond efforts to simply improve access to care within the clinical setting.

Solutions

There are generally 4 practical methods that cancer programs can use to begin improving health equity:

1. Proactively identify patient care gaps within the community to understand both clinical and nonclinical vulnerabilities across the social determinants of health spectrum
2. Expand access to cancer screening within communities, increase outreach by bringing care closer to home, and improve health literacy in a socioculturally tailored manner
3. Increase diversity in the workforce and in clinical trial participation
4. Improve provider and staff education to facilitate the delivery of culturally appropriate care, free of implicit bias and medical discrimination.

Specific examples of tactics within these groupings are found in Figure 7.[16,17] When implemented thoughtfully, these methods can help cancer programs build connections and develop trust within their communities.

Patients and communities want to know that their health care providers understand their needs and are committed to empowering individuals to be engaged in both their general health care and cancer care journeys. Over time, deploying the tactics outlined in Figure 7 will enable cancer programs to improve access to care and build connections to the local community that drive increased patient volumes.

Moreover, by actively engaging with the community, health care organizations will eventually be able to treat diseases such as cancer at earlier stages, which often results in better treatment outcomes at lower total systemic costs. As health care trends toward population health and risk-based contracting models, this shift to reduced costs and improved outcomes will have a meaningful financial impact for provider organizations. In particular, cancer programs can indirectly realize ROI from health equity measures by fulfilling regulatory requirements for Certificate of Need applications and by meeting clinical research requirements to expand participating patient populations.
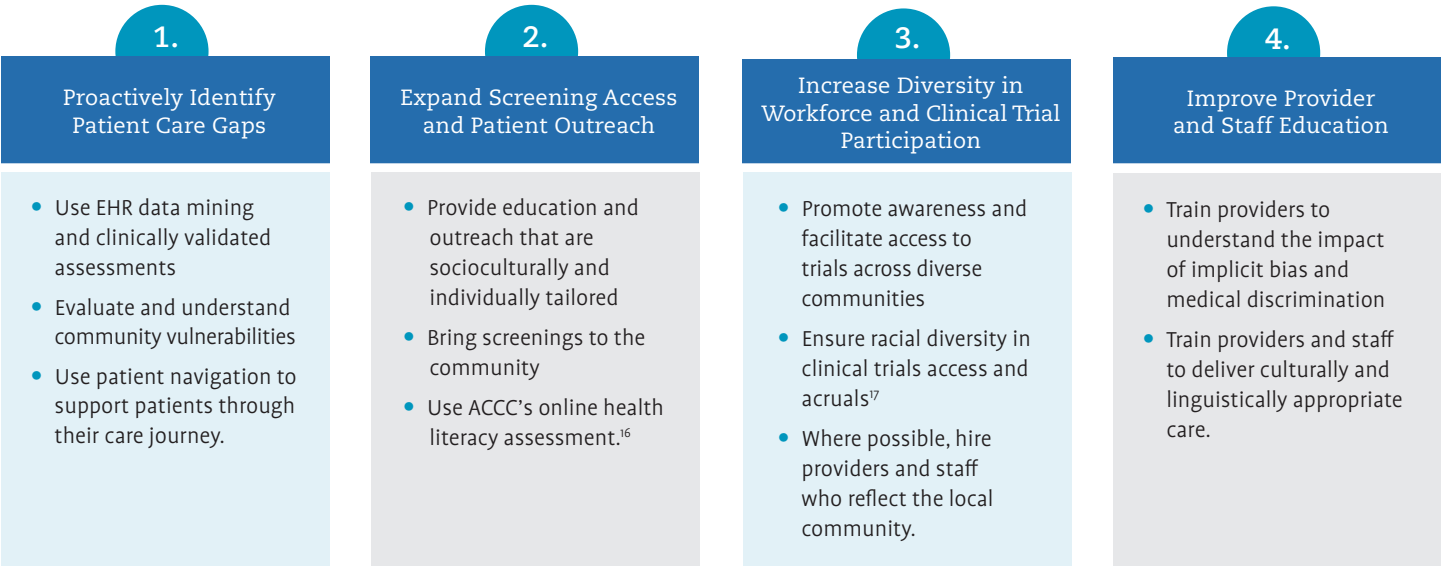
A Forward-Looking Approach

As the demand for high-quality, patient-centric cancer care continues to increase over the next decade, cancer programs that have prioritized the strategies described in this article will be best positioned to continue meeting the needs of their diverse communities, maintain competitive success, and realize programmatic volume growth. This success includes pursuing elements that could be considered more foundational (adoption of industry best practices for navigation services, overall program optimization, continued evolution of digital health capabilities), as well as proactively addressing more complex issues (health equity) and incorporating innovative approaches to better meet patient needs and expectations (alternative care models).

Just as successful clinicians take a holistic view of their patient's needs, administrators and leaders should adopt an expansive perspective of their roles as stewards of community cancer care into the future. **OI**

Monica DeNault and Lili Hay are Managers; Matt Sturm, MBA and Jessican Turgon are principals at ECG Management Consultants, a Siemens Healthineers Company.

Figure 7. Tactics to Improve Health Equity[16,17]

1. Proactively Identify Patient Care Gaps	2. Expand Screening Access and Patient Outreach	3. Increase Diversity in Workforce and Clinical Trial Participation	4. Improve Provider and Staff Education
• Use EHR data mining and clinically validated assessments • Evaluate and understand community vulnerabilities • Use patient navigation to support patients through their care journey.	• Provide education and outreach that are socioculturally and individually tailored • Bring screenings to the community • Use ACCC's online health literacy assessment.[16]	• Promote awareness and facilitate access to trials across diverse communities • Ensure racial diversity in clinical trials access and acruals[17] • Where possible, hire providers and staff who reflect the local community.	• Train providers to understand the impact of implicit bias and medical discrimination • Train providers and staff to deliver culturally and linguistically appropriate care.

ACCC=Association of Community Cancer Centers.

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