

 **CASE STUDY**

for U.S. health care providers

How TN Oncology Used ePROs to Scale Oncology Care Management

Lessons learned and keys to success

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Tennessee (TN) Oncology, a community-based cancer care practice, scaled an ePRO program across thirty plus clinics with the goal of improving patient monitoring and meeting value-based care requirements. This case study is intended for organizations looking to use ePRO data to advance their care management infrastructure and improve care outcomes.



CHEAT SHEET

Quick Primer: ePROs 101

What are ePROs?

A patient-reported outcome (PRO) is any report of the status of a patient’s health condition that comes directly from the patient, without interpretation of the patient’s response by a clinician or anyone else. Typically, PROs are used to assess symptoms, side effects of treatment, and health-related quality-of-life (HRQoL) measures—like pain, nausea, fatigue, physical function, mobility, depression, and anxiety. A Patient Reported Outcome Measure (PROM) is a tool to measure a PRO, and an ePRO is a PRO that’s collected via electronic platforms as opposed to paper-based forms.

Why do ePROs matter?

ePROs allow clinicians and researchers to better understand a patient’s experience living with a condition or receiving treatment—and do so in a way that provides standardized, validated data points. For some conditions, ePROs provide supplemental information about treatment impact, and for other conditions they are the only way to measure the outcome of interest (e.g., pain can only be assessed by patients self-reporting their pain levels). In general, ePROs enable:

- More responsive, proactive treatment management
- Patient-centered assessments of provider quality
- More nuanced, patient-centered understanding of treatment impact

How do ePROs work?

ePROs are typically collected via validated surveys as part of an organization’s ePRO program. They can be collected while patients are at home using smartphones or tablets, or during a check-in right before an office visit. ePRO data can then be shared with the clinician at the point of care and can be used to monitor the patient between visits. Successful programs create bi-directional engagement between the patient and clinician and integrate into clinician and patient “workflows.”

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Overview

The challenge

With a growing number of patients in value-based care arrangements, Tennessee Oncology (TN Oncology) needed a way to proactively coordinate patient care, as well as collect the necessary patient data to satisfy value-based contracts. At the same time, they were challenged by a slowly growing workforce, while attempting to meet the demands of increasing patient volumes.

The organization

TN Oncology is a community-based cancer care specialty practice with over thirty clinics across the state of Tennessee. The organization provides on-site chemotherapy treatments and is a key player in oncology clinical trial research. TN Oncology is a founding practice partner of OneOncology, a physician-led community oncology network with over 500 providers.

The approach

In 2016, TN Oncology launched an ePRO program to scale their care management efforts. To simplify communication between patients and the clinics, TN Oncology partnered with a vendor to create a single platform to house both their patient portal and ePRO program. Beginning with a pilot program of five clinics staffed by two nurses, the ePRO program expanded to more than thirty clinics through a dedicated, centralized care coordination team.

The result

TN Oncology's ePRO program has helped the organization satisfy value-based care requirements and differentiate itself to payers with its quality outcomes. Additionally, the program has led to positive downstream impacts such as increased patient satisfaction and reduced number of tasks physicians receive in the EMR. As a next step, TN Oncology hopes to embed support services, such as pharmacy services, financial counseling, as well as clinical trials within the ePRO platform to ensure a seamless experience for patients and clinicians.

APPROACH

Approach

For organizations looking to scale existing care management efforts and improve patient-centered care delivery, below are TN Oncology's six keys to successfully building an ePRO program.

01 Clearly articulate the goals and scope of the ePRO program

02 Budget adequate time to identify the right technology partner

03 Centralize staffing infrastructure to standardize care delivery

04 Build workflows that enable prioritization and scale

05 Equip patients with ongoing digital training support

06 Take an iterative approach to boosting patient response rates

01 Clearly articulate the goals and scope of the ePRO program

In order to succeed in its value-based contracts, TN Oncology recognized it needed a tool to monitor and engage patients outside of the clinic. However, with limited staff, a telephonic care management solution was not enough to reach its more than 70,000 patients.

Dr. Dickson, TN Oncology’s Chief Medical Officer, saw developing an ePRO program as the answer. The program would utilize a scalable, electronic tool to make it easy for the care team to reach out to patients, and patients to communicate with the practice.

Define ePRO program scope

At the onset, TN Oncology defined a clear purpose for their ePRO program: streamline communication between the patient and practice by creating one place where patients would be able to go to for everything (e.g., responding to patient questionnaires, communicating with pharmacists, tracking medication compliance, and ideally participate in pharmacy and clinical trials). The program was scoped to focus on bidirectional communication between the patient and practice for any necessary interventions and not for the technology solution to provide in-platform clinical advice or solutions.

“ Advice from TN Oncology

Sample questions to ask before starting an ePRO program:

- What is the goal of your ePRO program?
- Who will be the primary users of the system other than patients?
- What use cases do you want to track patient data for? E.g., value-based contracts, patient experience initiatives, quality improvement projects



CLEARLY ARTICULATE THE GOALS AND SCOPE OF THE EPRO PROGRAM

Leverage program goals to build buy-in

With a clear purpose and scope, Dr. Dickson was able to more easily build buy-in for the new program. Below are examples of how TN Oncology tailored messaging to get program buy-in based on stakeholder.



Physicians: Dr. Dickson illustrated that the program would not add complexity to physicians’ day-to-days. Instead, it could reduce the number of patient messages physicians should have to respond to in the EMR (since care coordinators would be the first responders to patient questions). In addition, it could reduce the number of patients admitted to the hospital and consequently the need to round in the hospital as often.



Chief Financial Officer: Dr. Dickson illustrated how the cost of the technology would be offset by the savings achieved through monitoring patients more closely. The key was illustrating anticipated avoided costs and the reduction in unnecessary utilization of services. To avoid costs associated with hiring new FTEs, TN Oncology leveraged existing care coordination nurses to staff the ePRO program.

“ Advice from TN Oncology

We had to lay it all out cost by cost. For example, here is the number of high-risk patients and here is the hospital admissions costs. We had to show not just the cost of the technology, but also the cost of the care team. We used existing nurses.

Dr. Natalie Dickson
CMO, TN Oncology

02 Budget adequate time to identify the right technology partner

With consensus on the decision to implement an ePRO program, TN Oncology spent the next two years identifying a technology vendor.

First, they defined specific use cases the technology platform would have to serve in order to achieve their ePRO program's goals and scope. For example, they knew the platform would have to be able to collect data for value-based contracts. Next, they used those use cases to develop specific criteria to evaluate and rank potential vendors, such as the ability to perform data analysis and integrate with the EMR. TN Oncology assessed five vendors before deciding on a partner. Finally, the vendor spent six to twelve months working with TN Oncology to understand their workflows and adapt the platform accordingly.

Finding the appropriate partner to build the ePRO program was critical to the success of TN Oncology's ePRO effort. The organization did not compromise on finding a vendor who had a good technical team, understood clinical workflows, allowed for the necessary data analysis, and offered the ability to customize the tool to changing program needs. For example, many of the vendors TN Oncology assessed did not allow them to access and analyze collected data. This was a nonstarter for TN Oncology since data analysis would be critical to understanding patient voice and measuring the success of quality improvement projects.

“ Advice from TN Oncology

Don't rush the process. I'm glad we implemented the program slowly because it gave us time to get what we wanted from the vendor.

Dr Natalie Dickson
CMO, TN Oncology



BUDGET TIME TO IDENTIFY THE RIGHT TECHNOLOGY PARTNER

Below is an illustration of how TN Oncology evaluated each vendor. They rated each evaluation criteria on a zero to five scale, which included whether the product feature was present, and if so, to what degree.

TN Oncology’s ePRO platform vendor criteria

| Criteria | Vendor 1 | Vendor 2 | Vendor 3 |
|--|-----------|-----------|-----------|
| Ease of integration with EMR and existing platforms ¹ | 3 | 5 | 3 |
| Ability to document care/intervention | 5 | 5 | 5 |
| Data collection on PROs, intervention, and measures | 5 | 1 | 3 |
| Ease of project launch with pharma | 5 | 0 | 1 |
| Ability to administer surveys and bulk messaging | 3 | 3 | 3 |
| Prioritized work queuing presented to navigator | 5 | 1 | 5 |
| Two-way communication but no free text messaging | 5 | 1 | 3 |
| Oncology specific with robust content | 5 | 1 | 1 |
| Customer support | 5 | 5 | 5 |
| Able to customize | 5 | 5 | 3 |
| Ease of use for patient | 5 | 1 | 5 |
| Strong customer references | 5 | 1 | 1 |
| Affordability | 5 | 1 | 1 |
| Vendor motivation | 5 | 1 | 5 |
| Totals | 66 | 31 | 44 |

Scoring key

- 0 = no
- 1 = potential/low
- 3 = developing/medium
- 5 = yes/high

1. Existing platforms include practice management and triage software and systems.

03 Centralize staffing infrastructure to standardize care delivery

Instead of hiring new FTEs to staff their ePRO program, TN Oncology combined their existing care coordination and triage teams¹ to manage the ePRO platform. They also moved to a centralized staffing model, which enabled the clinics to focus on being patient-facing without adding too much ePRO-related work. The new centralized Care Transformation Team created more accountability for the ePRO program and improved communication between individual care coordinators. Long-term TN Oncology sees the centralized model as critical to their program’s growth and ability to scale.

Benefits TN Oncology realized with a centralized staffing model



Better care standardization:
The centralized model created a standard way to deliver care in the ePRO platform across 30+ clinics.



Boosted staff retention:
Staff can work remotely as needed such as when clinics are closed due to inclement weather.



Reduced clinician burnout:
With scoped roles, care coordinators are not pulled into clinic tasks and clinic staff are fully dedicated to patient-facing tasks.



Improved patient experience:
Centralizing staffing increased efficiency and allowed nurses to respond to patients more quickly (in 2 hours or less).

1. The care coordinator and triage teams are all RNs by background. Around 80-90% of these clinicians came to TN Oncology with an oncology background.

Source: Tennessee Oncology, Nashville, Tennessee Advisory Board interviews and analysis

CENTRALIZE STAFFING INFRASTRUCTURE TO STANDARDIZE CARE DELIVERY

While both the triage and care coordination teams jointly monitor the ePRO platform, each team's purpose is different. The triage team plays a more reactive role by responding to patient-initiated requests such as when a patient reports symptoms and needs immediate clinical guidance. In contrast, the care coordination team plays a proactive, navigation role by identifying patient needs and symptoms early on.

Data analysts and health economics researchers support the team through performance improvement and data tracking. For example, the data analysts and researchers assess outlier hospitalizations and whether they correlate with processes like physician continuity.

04 Build workflows that enable prioritization and scale

TN Oncology defined “workflows” for every stakeholder that would interact with the ePRO program. With clearly delineated clinical roles, TN Oncology scaled the ePRO program from five to 34 clinics. Below are lessons from TN Oncology:

Target patients by risk-level, contract, and clinical need

While all patients have access to the platform, only patients in value-based contracts and high-risk patients¹ are actively enrolled in the ePRO program. Today, each care coordinator is assigned 225-250 patients. This ratio protected care coordinator capacity to manage all active patients and allows the program to scale more easily.

Train care coordinators to be first responders

Prior to the program, patients would send questions to physicians through the patient portal or calling the clinic, but physicians were unable to answer in real time. With the ePRO program, care coordinators are trained to be the first responders to patient questions and can provide timely interventions or escalate to physicians, as necessary.

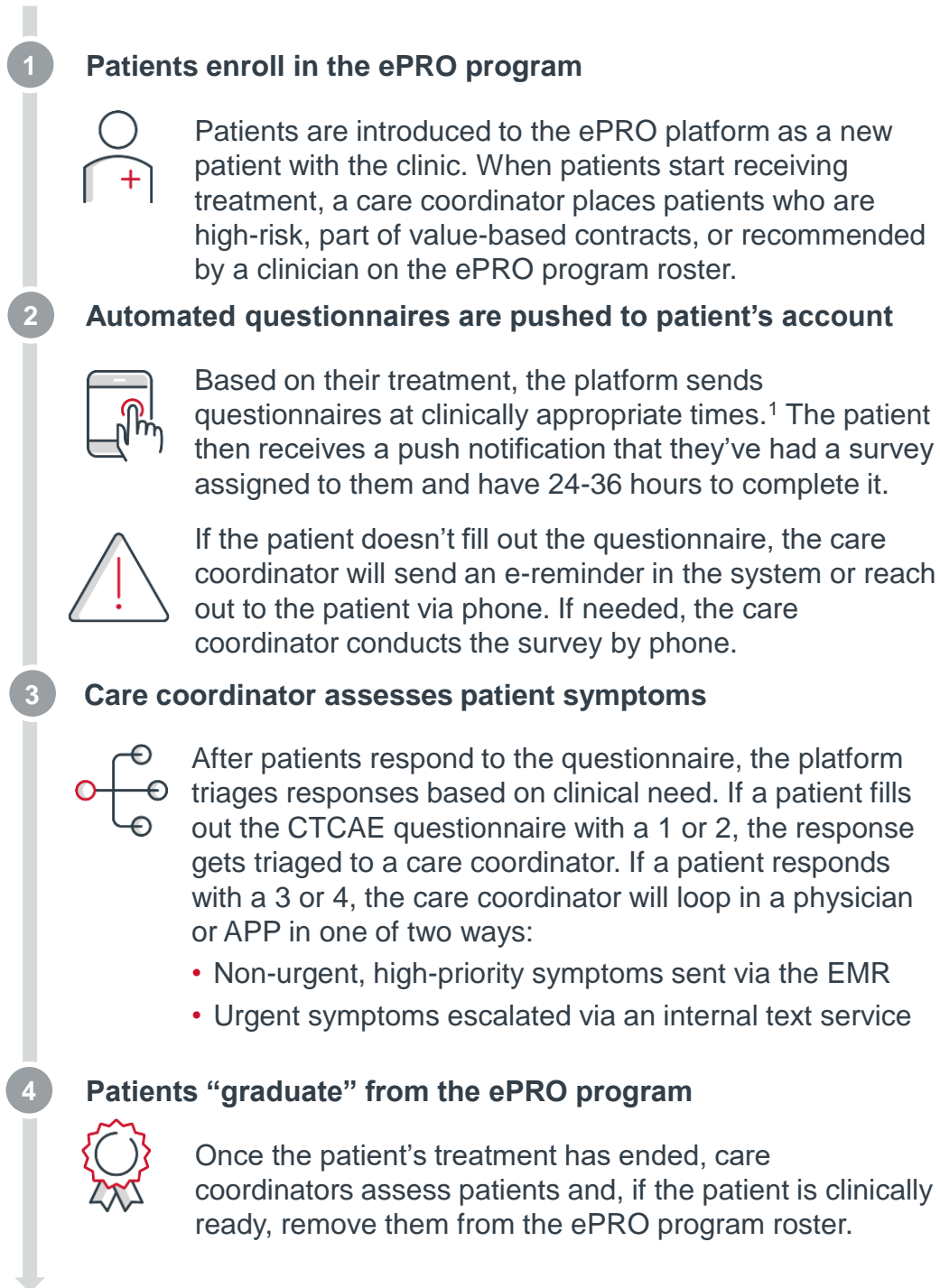
Scope the physician role to be the touchpoint of last resort

To prevent significant impact to clinicians’ day-to-days, care coordinators only reach out to physicians as necessary. Only if patients report a clinical symptom grade² of 3 or 4 on an ePRO patient questionnaire does the care coordinator contact a physician or APP. In this model, physicians do not work directly in the ePRO platform but respond to escalated requests via the EMR or TN Oncology’s internal text message platform.

1. Patients can be high-risk due to prognosis, number of ER visits, depression or stress screening scores, or by clinician referral.
2. TN Oncology developed ePRO questionnaires using [CTCAE grading scales](#) to promote consistency. If patients respond with a clinical symptom grade of 1 or 2, the care coordinator manages any required intervention.

BUILD WORKFLOWS THAT ENABLE PRIORITIZATION AND SCALE

TN Oncology’s ePRO program workflow



1. TN Oncology adjusts the timing of when patient questionnaires are sent based on treatment. For example, patients receiving chemotherapy receive a questionnaire three days after treatment because patients often experience symptoms at that time. Patients on immunotherapy receive a questionnaire seven days post therapy because symptoms often surface during that time.

05 Equip patients with ongoing digital training support

Digital inequity can undermine any ePRO program and TN Oncology understood that their program was no exception. To support patients who lacked internet access, were inexperienced with digital technologies, and/or were uncomfortable uploading information into digital systems, TN Oncology developed “fail safes” to capture and support these patients. These fail safes consisted of various additional touchpoints, ranging from proactively assessing digital literacy at intake, to developing alternative ways of capturing ePRO data (e.g., phone calls to patients’ homes and iPads in the clinic to collect survey responses).

Excerpt

TN Oncology’s digital literacy screening questions

1. How often do you use email?

- Daily
- Weekly
- Other:

2. Do you have regular access to a computer, tablet, or smartphone?

- Yes
- No

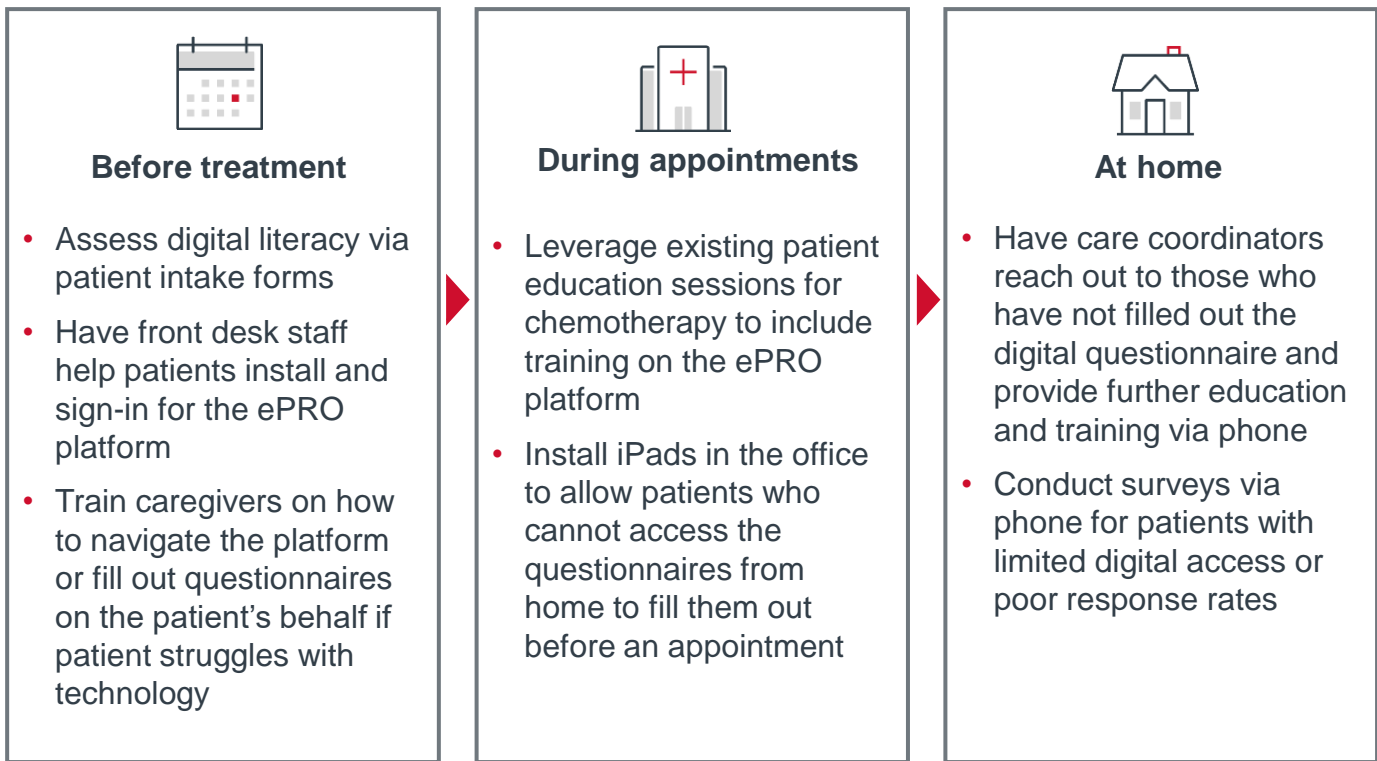
3. If not, does your caregiver have access to a computer, tablet, or smartphone?

- Yes
- No

EQUIP PATIENTS WITH ONGOING DIGITAL TRAINING SUPPORT

TN Oncology’s ePRO program model ensures digital support and training doesn’t happen only once and instead relies on multiple touchpoints from a range of stakeholders including front desk staff, check-out staff, family and caregivers, and care coordinators throughout the patient’s treatment.

Sample touchpoints to address digital inequity across the patient journey



06 Take an iterative approach to boosting patient response rates

When TN Oncology first launched their program, it took patients about 30 minutes to fill out an ePRO questionnaire, which led many to quit the survey before completing it. TN Oncology made three key changes to improve patients' experience with the platform and boost patients' response rates. With these changes, patients now spend only 5 minutes responding to questionnaires.



Create ePRO program awareness at the onset

Key to improving patient response rates was educating the patient about the benefits of the ePRO program throughout their treatment. Today, if a patient is enrolled within a value-based care program, the care coordinator discusses the ePRO program at the outset of joining the clinic. The coordinator will explain how they will be the patient's main point of contact, how the patient will be sent surveys, and how the surveys help the patient receive better, more timely care within the clinic and remotely. If patients aren't responding to questionnaires, the care coordinator will call the patient and reiterate the importance of capturing the patient's ePRO data.



Advice from TN Oncology

- 1) Include patients and caregivers in the development of the ePRO platform and patient questionnaires to ensure the user journey is easy for patients and relates to their lived experiences.
- 2) Analyze the data on how patients interact and engage with the patient questionnaires. For example, track how many patients have filled them out, opened them, and not opened them; where do patients stop filling them out; how much time are patients willing to spend before exiting a survey.



TAKE AN ITERATIVE APPROACH TO BOOSTING PATIENT RESPONSE RATES



Adjust questionnaire length to individual patient needs

TN Oncology discovered that some patients with few to no symptoms were stuck filling out questions that didn't apply to them. TN Oncology adapted the patient questionnaire to first ask, "are you experiencing any symptoms?" If patients answer no, the questionnaire soon ends. If patients respond 'yes,' they have the ability to choose from twelve symptom categories such as GI, fever, etc. Additionally, TN Oncology eliminated free-text fields to save patients' time and to ensure quantifiable data.

| Status check survey questions | | Excerpt |
|---|-------------------------|----------------|
| • How are you feeling today? | 0 1 2 3 4 5 6 7 8 9 10 | |
| • Are you having any symptoms? | Yes or No | |
| • Do you have any issues you want to discuss? | Yes or No | |
| • How do you want us to contact you? | Phone or Patient Portal | |



Engage patients with bidirectional feedback

Because timely clinician feedback creates an incentive for patients to respond to questionnaires, TN Oncology requires a two-hour-or-less response time for care coordinators to respond to patients during business hours. Looking ahead, TN Oncology is looking to establish additional triage capabilities outside of business hours and expand availability of same-day appointments for patients who indicate urgent symptoms on their ePRO questionnaire.

“ Advice from TN Oncology —

Patients appreciate the proactive approach, such that if we took the program away now, we'd have an uprising with our patients.

Dr. Johnetta Blakely
TN Oncology

Results

TN Oncology tracks four metrics to evaluate the success of their program: hospitalization rates, ED visits, referrals to supportive care, and patient satisfaction. To date, they have seen improvement across all four metrics.

Outside of these specific metrics, TN Oncology’s ePRO program has helped to:

- **Measure success of quality improvement efforts:** TN Oncology analyzes aggregate ePRO data to identify points in care where they can be more proactive and improve on care delivery and patient experience. Results and progress are then shared with the board and with clinicians through clinic scorecards and a weekly bulletin from the CMO.
- **Differentiate TN Oncology to payers:** TN Oncology uses ePRO program data to satisfy value-based care requirements and negotiate better contracts. For example, TN Oncology was able to compare their quality outcomes (e.g., reduced hospitalization rates) to others in the state.
- **Improve patient and provider satisfaction:** The ePRO program has boosted support provided to patients (e.g., two-hour-or-less response times to inbound symptom management triage calls), which has improved patient experience. In addition, the program has reduced the number of physician tasks in the EMR, which has led to positive feedback from physicians.
- **Partner with pharma on clinical studies:** TN Oncology supplies ePRO data to pharmaceutical companies to help provide real world evidence on treatment protocols.

Looking ahead, TN Oncology plans to integrate specialty pharmacy and clinical trials into the platform to further integrate components of oncology care into a singular platform.


Conversations you should be having

01 Identifying how ePROs can advance strategic priorities to establish a vision and gain buy-in

02 Engaging cross-industry partners to identify opportunities for collaboration (especially among provider, technology, life science, advocacy, and research organizations)


03 Deciding which components of an ePRO program should be condition-specific vs. condition-agnostic, taking into account both population-level and individual patient priorities


04 Determining how to evaluate ePRO program success and leverage that success to engage payers


Conversations focused on ePROs are likely related to ongoing conversations around care management and remote patient monitoring. To incentivize and finance ePRO programs, leaders should consider them as part of the larger infrastructure investments required to support the transition to value-based care and care at home. 


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