

An Inside Look at Precision Medicine Stewardship at TriHealth Cancer and Blood Institute

As advancements in cancer diagnostics have propelled precision medicine forward, next generation sequencing (NGS) technology has become a popular way to perform multigene testing in patients with cancer.¹ Recently, the American Society of Clinical Oncology (ASCO) released a clinical opinion encouraging the use of multigene panel-based assays in patients with metastatic or advanced cancer if more than one biomarker-linked therapy is approved for the patient's disease;² however, implementation of such guideline-concordant testing continues to present challenges. Surveys and focus groups have reported impediments associated with ordering biomarker tests, tracking tissue samples, communicating results to clinicians, and other operational challenges. One solution that has been gaining popularity is the development of a new role in the multidisciplinary cancer care team—a precision medicine steward, who serves as the point person and navigator for biopsy samples and biomarker testing processes.

The Association of Community Cancer Centers (ACCC) explores how cancer programs are overcoming common barriers associated with cancer biomarker testing through its education initiative, *Precision Medicine Stewardship*. In this article, ACCC shares how TriHealth Cancer and Blood Institute has improved coordination of its biomarker testing program through the introduction of its own steward role in the form of a precision medicine test coordinator.

TriHealth Cancer and Blood Institute

TriHealth Cancer and Blood Institute provides multidisciplinary cancer care at over 125 locations throughout the greater Cincinnati area in Ohio. Featuring the largest personalized medicine program for adults in the region, TriHealth is leading the way in immunotherapy and in the development of customized treatment plans for its patients. Because Tri-

Health believes in providing patients with a full, multidisciplinary program of care, its precision oncology team includes medical oncologists, nurses, genetic counselors, clinical researchers, genetic specialty lab coordinators, pathologists, surgeons, pharmacists, and laboratory partners. Together, this team works to recommend genetic testing, review genetic lab results, ensure accurate diagnoses, identify the best treatment plans, deliver treatments at patient-centered infusion centers, and coordinate advanced care with seamless communication between physicians and medical teams. Beyond this, clinical experts and oncology scientists meet regularly for molecular tumor boards to review tumor profiling test results and make therapy or trial recommendations.

Recognizing the expanding role of biomarker testing in patients with cancer, TriHealth Cancer and Blood Institute formed their first precision oncology working group eight years ago and developed innovative ideas around streamlining the biomarker test ordering process; today, this has evolved into the precision medicine test coordinator role, whose primary purpose is to ensure optimal clinical workflows and to reduce delays in test ordering.

Precision Medicine Test Coordinator

As a member of the precision oncology team, the precision medicine test coordinator works closely with oncologists, nurses, pathologists, and genetic counselors. TriHealth Cancer and Blood Institute has digitized several steps in the biomarker test ordering process, which has created a more efficient workflow for the precision medicine test coordinator. Working with a single reference lab that offers comprehensive NGS testing, TriHealth built an electronic order that links directly to the partner lab in its Epic system and integrated the workflow using the Epic Genomics Module for the return of discrete biomarker results. While most biomarker tests are

ordered through this reference lab, occasionally an order may be placed with a different lab, requiring manual entry into the lab portal. Regardless of the lab used, the consistency of using Epic to place test orders and utilizing the precision medicine test coordinator as the point of contact for clinical and lab teams has improved TriHealth’s ability to return results quickly to ordering providers and their patients. Through the power of technology and the addition of this single role, TriHealth’s turnaround time from order to results decreased from an average of 24 days to 12 days and the quantity not sufficient (QNS) rate of testing decreased by five percent (unpublished, internal data).

The precision medicine test coordinator role also includes the following responsibilities:

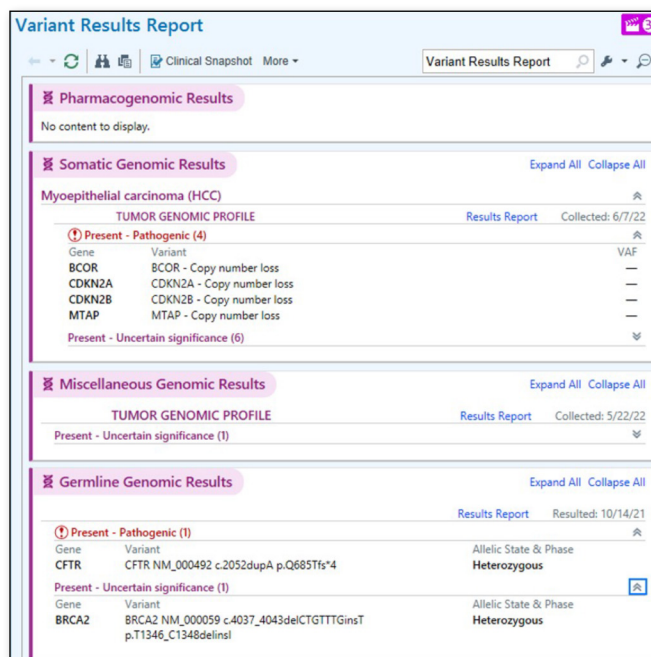
- **Coordination with internal and external anatomic pathology departments** to ensure that documentation and samples are sent to the reference lab as quickly as possible when pathology slides or cell blocks need to be obtained from an outside institution.
- **Coordination of blood draws for QNS tissue samples** to complete biomarker testing. Blood is usually drawn during medical oncology visits but can be collected through mobile phlebotomy services.
- **Working with patients** to complete patient financial assistance applications. On a weekly basis, the reference lab sends the precision medicine test coordinator a list of patients who have already applied for patient assistance. This helps the precision medicine test coordinator direct communication to patients who are eligible but have not yet applied.
- **Entering test orders** into the lab portal when an oncologist orders a test from a non-integrated reference lab. When the results become available, the precision medicine test coordinator retrieves the results, enters them into Epic, and notifies the ordering physician.

EHR Integration: Discrete Genomic Data

At TriHealth Cancer and Blood Institute, the use of Epic ordering (rather than through outside portals) and the Epic Genomics Module has streamlined several key components around biomarker test ordering and results. Test orders are entered directly into Epic and results appear in Epic’s “Lab” section as discrete data elements. A PDF of the report is connected to the order as a reference and uploaded into the “Media.” Currently, the Module directly interfaces with a single reference lab for tumor biomarkers and a second lab for germline genetic tests, however TriHealth is working to build Epic integrations with several other labs.

By using the Epic Genomics Indicators Module, TriHealth Cancer and Blood Institute can display test results alongside other lab tests (where providers are accustomed to looking), but also features separate sections for easy readability:

Figure 1. Example of Epic Genomics Indicators Module



Structured genomic data can be linked to automated genomic indicators and trigger alerts (e.g., best practice advisories) that provide clinical decision support for providers. Using the Epic SlicerDicer software (a data extraction, analysis, and reporting tool), the precision oncology team has also been able to study whether certain patient groups may be receiving suboptimal testing. While researchers have used SlicerDicer for a variety

Figure 2. Example of Epic Care Gap Logic

Topic	Due Date	Frequency	Date Completed
Current Care Gaps			
Pneumococcal 0-64 (1 - PCV)	Overdue - never done	Imm Details	
MRI Breast PALB2 Positive	Overdue - never done	1 year(s)	
Mammography PALB2 Positive	Overdue - never done	1 year(s)	
COVID-19 Vaccine (3 - Booster for Janssen series)	Overdue since 1/26/2022	Imm Details	12/1/2021 - COVI... 5/29/2021 - COVI...
PAP Screening	Overdue since 4/17/2022	3 year(s)	4/17/2019 - CYT...
Upcoming			
DTap, Tdap, and Td (4 - Td or Tdap)	Next due on 1/18/2032	Imm Details	1/18/2022 - Tdap... 5/19/2020 - Tdap... 5/24/2016 - Tdap...
Completed or No Longer Recommended			
Influenza Vaccine	Completed	Imm Details	10/26/2022 - Influa... 10/19/2021 - Influa... 9/23/2020 - Influa... 11/11/2019 - Influa... 11/11/2019 - Influa... 12/1/2018 - Influa...
Meningococcal conjugate valent 4 (MCV4)	Aged Out	Imm Details	

of clinical and epidemiological analysis³ and to identify eligible patients for research studies,⁴ at TriHealth, a designated research coordinator reviews cases that have been flagged by the NGS lab for clinical trial inclusion/exclusion criteria and cases are subsequently reviewed during monthly molecular tumor board meetings.

By integrating genomic test results into the electronic health record (EHR), clinicians can build rules so that the Epic Care Gap logic (a built-in care planning and coordination tool) automatically triggers specific follow-up items for patients who have specific indicators (e.g., schedule a follow-up meeting with the multidisciplinary clinic to discuss screening tests).

Precision Oncology Team

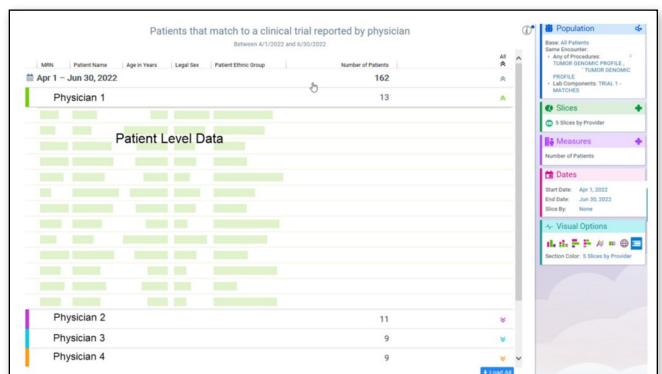
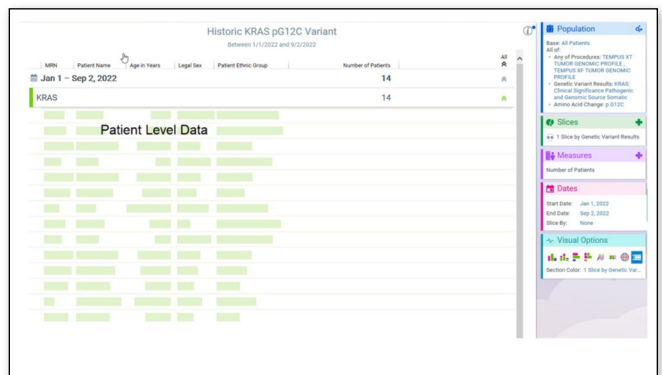
As biomarker testing has continued to expand and include more patients with advanced cancers, TriHealth Cancer Institute has added a second precision medicine test coordinator to its roster. Together, these coordinators share responsibilities and coordinate workflows to ensure that biomarker test orders are entered completely and any delays when obtaining pathology slides from outside institutions are minimized.

The precision oncology team has also established a vetting process for reviewing new labs and tests. The team regularly gathers internal data to identify opportunities for quality improvement in cancer biomarker testing. Using the analytics and reporting tools in Epic, the team has built automated data dashboards for genetic counselors and specific oncology areas such as lung cancer or breast cancer to visualize trends in biomarker testing.

Examples of key metrics tracked by the precision oncology team include the following:

- What proportion of patients with advanced cancers are receiving biomarker testing? How many patients had actionable results? Team members can see a breakdown of this information by different cancer types.
- When a new targeted therapy becomes available, which patients are potentially eligible for treatment? Using a few clicks, a report can be generated to identify these patients.

Figures 3 and 4. Examples of Epic SlicerDicer Software



- What proportion of patients apply for financial assistance? How many receive assistance? Using these data, the precision medicine test coordinator can reach out to oncologists and nurses to inform them about which patients may still need to be offered an assistance application.
- Are there any groups of patients who are receiving suboptimal testing? Could this indicate a health disparity?

Future Direction

As oncologists continue to expand their use of NGS testing in patients with advanced cancer, the need for precision medicine test coordinators will continue to grow. The precision oncology team at TriHealth Cancer and Blood Institute also continues to seek ways to improve operational efficiencies and enable their oncologists to have the right information they need to make informed treatment decisions. As they work to integrate other labs through the Epic Genomics Module, TriHealth Cancer and Blood Institute will be able to streamline the test ordering process across multiple areas of oncology and receive test results as discrete data elements for analytics and reporting. These refinements will affect both somatic and germline testing, so there may be more coordination needed between precision medicine test coordinators and genetic counselors to ensure the right tests are being ordered. As the cancer biomarker landscape evolves, more testing may be

needed as patients undergo liquid biopsy, sequential testing to identify resistance genes, or other tests to track treatment progress. Moreover, by having genomic data directly linked to clinical decision support tools, clinicians will be better equipped to recommend optimal treatments for patients. ■

For more examples and resources, visit the ACCC Precision Medicine Stewardship program [webpage](https://acc-cancer.org/precision-medicine-stewardship) (acc-cancer.org/precision-medicine-stewardship).

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The Association of Community Cancer Centers (ACCC) is the leading education and advocacy organization for the cancer care community. Founded in 1974, ACCC is a powerful network of 30,000 multidisciplinary practitioners from 2,000 hospitals and practices nationwide. As advances in cancer screening and diagnosis, treatment options, and care delivery models continue to evolve—so has ACCC—adapting its resources to meet the changing needs of the entire oncology care team. For more information, visit acc-cancer.org. Follow us on social media; read our blog, ACCCBuzz; tune in to our CANCER BUZZ podcast; and view our CANCER BUZZ TV channel.

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