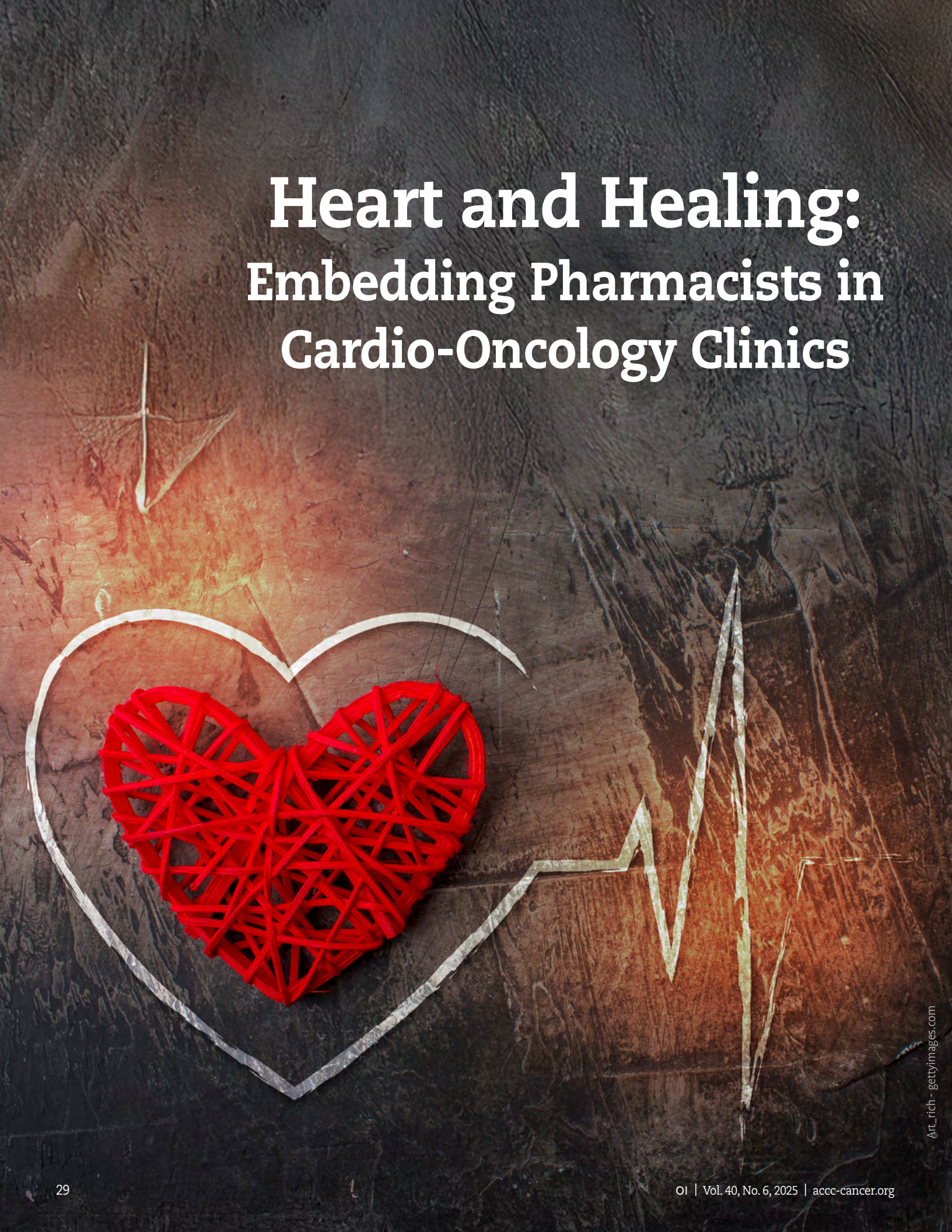
Heart and Healing:
Embedding Pharmacists in Cardio-Oncology Clinics



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BY RACHEL RADWAN

With the advancement of cancer detection and targeted therapies, more patients are living longer and managing cancer as a chronic condition, rather than a terminal diagnosis. While this shift marks significant progress in eradicating cancer, it co-occurs with a new challenge: Many patients are experiencing severe comorbidities in tandem with their cancer as a result of chemotherapy and certain targeted therapies and immunotherapies, with cardiotoxicity a growing concern among oncologists. In many cases, patients are at higher risk of experiencing cardiovascular complications than a recurrence of their cancer, demonstrating the need for the emerging field of cardio-oncology over the last decade.[1]

Cardio-oncology focuses on the treatment, prevention, and monitoring of the cardiovascular adverse effects (AEs) of cancer treatment and long-term cardiac care for patients experiencing these effects. Historically, the pharmacist's role has not been well defined in the cardiovascular disease setting secondary to cancer therapy. However, great opportunity exists for oncology pharmacists in this field, as they possess robust knowledge about intravenous and oral oncolytic therapies, the AEs caused by these agents, the evaluation of drug interactions, toxicity management, and how to monitor for the efficacy and safety of medications.

To explore the potential of pharmacists in cardio-oncology care, *Oncology Issues* spoke with Marcela W. Heiss, PharmD, BCOP, a clinical oncology pharmacist specializing in cardio-oncology at St. Luke's Cancer Institute, where she completed her PGY-2 oncology pharmacy residency. During that time, Dr. Heiss identified a gap in the cardio-oncology clinic where a pharmacist's expertise could significantly improve patient care through managing drug-drug interactions, developing patient-specific monitoring parameters based on baseline cardiovascular risk factors and cancer treatment, and facilitating the management of chemotherapy-related cardiac toxicities. To demonstrate the value of the pharmacist's role, Dr. Heiss collaborated with key stakeholders in St. Luke's oncology pharmacy residency program and members of the cardio-oncology clinic to initiate a 4-week pilot project backed by literature supporting the addition of a pharmacist in this setting. After presenting carefully tracked outcomes and feedback from clinical teams, she secured a 0.5 FTE (full-time equivalent) oncology-pharmacist position in the clinic.

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Filling the Gaps With Specialized Oncolytic Knowledge

According to Dr. Heiss, among the most common cardiovascular complications seen by clinicians are left ventricular dysfunction, hypertension, and atrial fibrillation. Of note, there is a growing population of patients with a baseline of coronary artery disease accompanied by risk factors for cardiotoxicity. These risk factors are exacerbated by cancer treatment, often leading to metabolic syndromes like hyperlipidemia, weight gain, and hypertension.

"It is pharmacists' strong knowledge base of oncolytic therapies and alternative treatments that make them extremely valuable in the cardio-oncology setting," Dr. Heiss stated. These professionals are highly attuned to the cardiovascular AEs certain cancer treatments can cause, allowing them to effectively brainstorm ways to manage them. Depending on the patient and the type of treatment, this management may entail referring to prescribing information to assess specific AE management recommendations, recommending a dose reduction, or pursuing an alternative chemotherapy. "For example, of the CDK 4/6 inhibitors used to treat metastatic breast cancer, ribociclib is one that's known to cause QTc prolongation, though it's listed as a first-line treatment," said Dr. Heiss. "But there are other agents, like abemaciclib and palbociclib, that don't cause QTc prolongation, and we can look to those as alternatives."

Since cardiologists are not trained in the oncology setting, they may know the first-line treatments, but not necessarily all the alternative drugs on the market. Pharmacists bring that specialized knowledge into the clinic setting, making them a valuable addition to conversations with the patient.

Dr. Heiss has found the management of drug-drug interactions to be a key role for a cardio-oncology pharmacist—particularly concerning cardiovascular and cardioprotective medication in conjunction with chemotherapy. Her role has also expanded in the past several months. "I started to take on blood pressure titrations and guideline-directed medical therapy titrations for heart failure. I also gave general monitoring recommendations for frequency of echocardiograms and drawing cardiac biomarkers based on drug prescribing information, cardio-oncology guidelines, and patient-specific risk factors," she explained.

Assessing Cardiotoxicity Risk Early and Often

Pharmacists are tasked with looking at the patient as a whole when making clinical recommendations. A key part of this process is performing an early cardiovascular risk assessment prior to starting chemotherapy. Oral chemotherapy pharmacists are ideal candidates to complete this assessment, due to their involvement with tyrosine kinase inhibitors, which tend to cause cardiovascular side effects.[2]

Dr. Heiss also stressed the value of performing a baseline risk assessment to determine if a patient requires baseline imaging or if they would be a good fit for the cardio-oncology clinic. "Doing so allows them to be seen by a dedicated provider and have a monitoring plan in place throughout their chemotherapy," she said.

For instance, at infusion pharmacies, pharmacists are likely to encounter patients on drugs like VEGF inhibitors, which can cause hypertension.[3] If a patient already has baseline hypertension, a drug like this puts them at even higher risk of cardiotoxicity. A simple chart review can flag this information for the pharmacist, who can address blood pressure concerns during initial patient education.

The complex nature of oncology means that providers are trained in all different settings, and the field itself encompasses much more than just the drugs being prescribed. Dr. Heiss stressed that finding ways to flag providers and pharmacists in the electronic health record (EHR) for cardiovascular risk makes a world of difference in patient outcomes. "Doing a cardiovascular risk stratification on every single patient just isn't feasible," she said. "We needed a way to prompt providers or pharmacists to complete a baseline stratification before starting chemotherapy for the patients that really need it."

New Strategies Advancing the Management and Monitoring of Cardiotoxicities

Despite being a relatively new field, cardio-oncology has produced several promising treatment methods for cardiotoxicity. Though still at an investigational stage, Dr. Heiss' institution is using cardiac biomarkers to enhance pretherapy risk stratification and detect subclinical cardiotoxicity during therapy. There is also potential for these biomarkers to be used as long-term cardiovascular monitoring for survivors of cancer.

St. Luke's has also implemented baseline cardiac biomarkers for immune checkpoint inhibitors in its treatment plans according to the European guidelines for cardio-oncology, which recommend performing a baseline troponin test in all patients regardless of their risk.[4] If a patient experiences a complication, providers will see in their chart that they received a baseline troponin test. Then the care team can perform another one to determine whether there has been any elevation, thus detecting any subclinical cardiotoxicity or rule out more severe cardiovascular toxicities from these agents, like myocarditis.

Another potential cardiac monitoring method, discussed at the 2025 American College of Cardiology's Cardio-Oncology Conference, is drawing a troponin lab in place of an echocardiogram—which is often costly for patients—throughout long-term monitoring to detect any heart damage that resulted from treatment. Not only is this method promising; presenting patients with these more affordable interventions makes quality cardiac care vastly more accessible.

> "Having a pharmacist embedded in this setting saved a significant amount of the provider's time per appointment," Dr. Heiss said. "We were able to further support the addition of a pharmacist with historical data in the ambulatory care setting demonstrating that when a pharmacist conducts patient consultations independently, it saves approximately two-thirds of the provider's appointment time per patient."

Ensuring Adequate Patient Education and Follow-up

Dr. Heiss identified patient education as an area with huge potential for improvement with the aid of pharmacists. "After being in this position for over a year, I've realized there's quite a lack of understanding from patients of why they're even coming to see us in the cardiology clinic," she stated. Many patients are overwhelmed with appointments with various specialists throughout their treatment, so it is essential that they receive information about the potential cardiovascular effects they could experience, how their cardiologist can manage these toxicities, and the long-term risks of certain drugs. With their specialized knowledge of AE management, pharmacists embedded in the cardio-oncology team are poised to effectively educate patients and provide helpful materials.

Pharmacists are also key to facilitating patient care and follow-up, particularly with the assessment of drug-drug interactions. Dr. Heiss emphasized the positive impact of following up with high-risk patients: "I've called patients before to check in, heard they're not doing well, and realized we need to see them sooner—not in 3 months when we thought it would be appropriate."

Making the Business Case for a Cardio-Oncology Pharmacist

Dr. Heiss' 4-week pilot project proved to be instrumental in gaining support for the creation of a permanent cardio-oncology pharmacist position at St. Luke's. Over that period, there were 10 clinic days in

which Dr. Heiss provided support, and just that short amount of time was enough for the cardiologist on site to notice a significant reduction in time spent researching treatment plans, cardiac and oncology medications, and their AEs. "Having a pharmacist embedded in this setting saved a significant amount of the provider's time per appointment," Dr. Heiss said. "We were able to further support the addition of a pharmacist with historical data in the ambulatory care setting demonstrating that when a pharmacist conducts patient consultations independently, it saves approximately two-thirds of the provider's appointment time per patient." The cardiologist with whom Dr. Heiss worked became a strong champion in pushing the initiative forward, citing that the need for a dedicated pharmacist to review patient charts, research oncology drug-drug interactions and AEs, and provide recommendations was significant.

"With cardio-oncology, you're combining 2 specialties," said Dr. Heiss. "You've got to know enough about both to make the optimal decision for patients. That's why having pharmacists be part of that team is key."

As cardio-oncology continues to evolve, the integration of pharmacists into this specialty is proving to be not only beneficial, but essential. Their unique expertise bridges critical gaps between oncology and cardiology, enhancing patient safety, streamlining care, and supporting overburdened providers.

Backed by her cardiologist's support, along with ambulatory care data from other clinics where pharmacists played a critical role, Dr. Heiss laid out the key benefits of a cardio-oncology pharmacist role to her institution's leadership team. Namely, this specialized role fortifies the oncology service line, drives advanced patient care, and improves revenue generation and health care efficiency by reducing the time spent by providers trying to understand treatment plans.

Dr. Heiss emphasized the importance of garnering support from physicians when proposing this role to the C-suite, as the metrics of cardio-oncology as a discipline are not yet well established. Therefore, another key aspect of the role is staying up to date with recent research from the field and relaying it to one's team. "When I was in the development phase of this project, I was essentially starting at zero. There were some articles out there with data about cardio-oncology pharmacists in different countries, but not much guidance on what exactly their role would look like," said Dr. Heiss.

In addition to reading the literature that was available, Dr. Heiss received input from 3 pharmacists in the US with oncology and cardiology backgrounds regarding key aspects of their workflows:

- The information documented in patient encounters
- Monitoring parameters
- Initiation of cardioprotective agents
- Drug-drug interaction assessments
- Change in cardioprotective agents
- Use of European Society of Cardiology (ESC) guidelines and the *Journal of the American College of Cardiology* (ACC).

During the implementation phase of the project, Dr. Heiss and her team determined that the ideal workflow involved pharmacist chart review prior to patient visits. "At first, this took me almost 2 hours per patient. Now that I know the pertinent information to look for—diagnosis, cardiac imaging in labs, date of the last echocardiogram, changes in ejection fraction or function, current drugs and dosage, radiation—I can find it within 20 to 30 minutes," she said.

Like any new role, defining and validating the scope proved to be a challenge at first. Dr. Heiss stressed the value of determining the right type of documentation to provide that would complement the cardiologist's documentation, rather than duplicating the information in the EHR. Another important distinction was the preferred background of a graduate pharmacist in the role: should they complete their PGY-2 in cardiology or oncology? Although they agreed pharmacists with either background would be successful in this role, ultimately, Dr. Heiss' team determined that a background in oncology—and thus a strong knowledge of oncology treatments and progression of the disease—would prove more valuable, especially since there will already be a cardiologist on the team.

Implementation Challenges

Limited literature in the field of cardio-oncology means that guidance for collecting measurable outcomes to support the need for a cardio-oncology pharmacist is minimal. Since the completion of her pilot program, Dr. Heiss has worked to gather a list of the most valuable metrics in building the business case for her position:[5]

- Morbidity and mortality rates
- Rate of patients assessed for cardiotoxicity risk before starting cancer therapy
- Change of cancer treatment to prevent or mitigate cardiotoxicity
- Time to referral from oncology to cardiology
- Time from referral to visit
- Time from visit to cardiovascular treatment
- Utilization of resources (eg, echocardiograms, labs, lipid panels, cardiac biomarkers)
- Rate of patients with cardiovascular disease who receive an optimal cancer therapy after optimization of cardiovascular status
- Rate of patients completing cancer treatment without cardiovascular complications
- Equity (eg, patient populations served)
- Rate of successful patient education about cardio-oncology services and specific cardiovascular toxicity profiles from oncolytic agents.

Enabling APPs to Work at the Top of Their License

Amid an ongoing shortage of oncologists at the national level, many cancer centers are finding ways to empower advanced practice providers (APPs) to work at the top of their license through credentialing. Dr. Heiss agreed that, as a pharmacist, having the

ability to step up and order labs and baseline imaging is incredibly helpful in avoiding delays in care. "Many of our ambulatory care pharmacists have the credentialing to perform titration of blood pressure medication as well; it's an important time-saver," she said.

Another important role for pharmacists is survivorship recommendations. Their knowledge of the long-term risks for cardiotoxicity leaves them poised to make recommendations on the frequency of future echocardiograms and cardiovascular assessments based on anthracycline and radiation doses without the need for provider oversight.

Improving Patient Safety With a Pharmacist-Led Model

Fortifying the cardio-oncology team with a pharmacist facilitates efficient interdisciplinary discussions among cardiology, oncology, and pharmacy. With another set of eyes on patients at risk for cardiotoxicity, this role enables safer and better transitions of care, as the pharmacist is well equipped to implement individualized guideline-recommended monitoring plans for patients based on cancer type, baseline risk, and prescribed drugs.

"Cancer treatment can be really rough and comes with a lot of adverse effects," Dr. Heiss said. "Pharmacists can help patients progress through their treatment more safely, especially if we know the patient is at a high risk for cardiotoxicity."

As cardio-oncology continues to evolve, the integration of pharmacists into this specialty is proving to be not only beneficial, but essential. Their unique expertise bridges critical gaps between oncology and cardiology, enhancing patient safety, streamlining care, and supporting overburdened providers. With early success at institutions like St. Luke's, this model offers a compelling blueprint for other cancer centers aiming to elevate their cardio-oncology services and improve outcomes for patients navigating the dual challenges of cancer and cardiovascular risk.

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