

How Perthera is Using AI and Molecular Data to Bring Precision Medicine to Oncology

By [Jack Carfagno](#) - January 7, 2020



Perthera is a cancer therapeutic intelligence company that leverages Artificial Intelligence (AI) and data-driven therapy recommendations for oncologists to offer precisely tailored treatments to cancer patients based on their genetic factors, molecular profile and much more. The company was founded seven years ago by a team of experts in oncology, biomarkers, bioinformatics, and AI, and has since become a prominent force in bringing precision medicine to oncology. Read on to

hear what Gary Gregory, Perthera CEO and President, had to say to *DocWire News* regarding his company's innovative work.

Gary noted that Perthera's primary goal is to "harness all the benefits and opportunities of precision medicine in oncology." He added that the patient's entire medical and treatment history, as well as their unique, multi-omic molecular profile position, is factored into the Perthera Platform, which is used by the physician to create their customized treatment plan. The patient's comprehensive clinical information is run through the company's Therapeutic Intelligence Engine™, which includes multiple databases, heuristic rules, algorithms and AI, that ultimately delivers a ranked set of therapeutic recommendations that the patient's physician can consider. The AI built into the Perthera Platform leverages its computational engine and multiple databases to compile and utilize real-world evidence (RWE) to improve patient outcomes.

"We also run *each and every* patient through our patented, cloud-based, molecular tumor board that allows us to scale a unique and powerful solution", Gary added. "This contrasts with most cancer centers where less than 10% of patients typically have the benefit of a molecular tumor board, which has been proven to be highly advantageous from a medical practice perspective."

Another facet of Perthera's mission is to equip pharma, biotech, drug development companies and clinical trial organizations (CROs) with real-world evidence and clinical services that can

enable them to expedite drug development, enhance market surveillance of these drugs and accelerate their clinical trials enrollment.

Regarding the advancement of their current technology, Gary noted that the company is always striving to advance Perthera's proprietary algorithms, use of real-world evidence, deployment of AI, and integration of new molecular technologies to continually improve their precision oncology solution.

"We're also involved in a number of exciting projects with industry, whether it's with pharma companies, CROs or advocacy groups", he added. "We partner with them to bring forward their initiatives, the developmental work they're doing on new therapeutic agents, they're detailing the clinical efficacy of precision medicine, and even the clinical utility of Perthera's Platform, which has been proven to provide a significant improvement in both overall and progression-free survival."

Perthera's Precision Medicine Platform for Hospital's & Physicians

Perthera's main offering is a Precision Medicine Program for Hospitals and Physicians, which allows healthcare providers to harness and capitalize on the benefits of Perthera's precision oncology platform. This program starts with the physician ordering the Perthera Platform and clinical report. Perthera completely de-burdens the clinical staff by orchestrating all molecular profiling tests, and running the comprehensive clinical information through its Therapeutic Intelligence Engine™, and then an expert Molecular Tumor Board, consisting of a variety of medical experts, to ultimately produce the ranked therapeutic options.

Next, Perthera delivers a personalized report that is precisely matched to each patient, and contains specific, ranked therapeutic recommendations that are supported by medical, clinical, and scientific evidence, to promote expanded progression-free survival and overall survival outcomes.

The final step in this process involves Perthera's following the patient and capturing comprehensive RWE data regarding the patient's treatment and outcomes.

"And the physicians and hospitals can use this data for research purposes, whether it's for publications, for accelerating their own clinical trials, or simply to advance the care of their patients," Gary explained. "The data we collect is made available for their use. We provide it back to them via a dedicated portal so that they can take full advantage of the understanding, analysis and utilization of their specific data, to advance their practice of medicine and care of their patients."

It's also important to note that Perthera now customarily delivers their Platform at low to no charge to hospitals, physicians and patients. This approach has been transformative in allowing many healthcare organizations to capitalize on the Perthera Platform and all it offers to providers and patients.

Perthera's Computational Engine

The computational engine, or Therapeutic Intelligence Engine™, is at the center of what Perthera offers healthcare providers and patients. This is founded upon their proprietary, comprehensive computational system that Perthera has been building over the course of six plus years.

“It features 10 distinct databases and over 50,000 heuristic rules, algorithms and AI,” he explained. “Every patient’s data is analyzed by Perthera’s Therapeutic Intelligence Engine™. We provide an initial set of computationally ranked therapies, and then the patient’s clinical data and information is analyzed and “polished” by our expert, cloud-based, Molecular Tumor Board which provides the highly unique “human in the loop” component of our Platform. The byproduct of these elements is the Perthera Report, which has these precisely ranked therapeutic recommendations (including on label, off label and clinical trial options) for the physician to evaluate, choose from and direct their patient’s medical therapies. As we collect RWE outcomes and treatment selections, we incorporate that data back into our Therapeutic Intelligence Engine™, which gains experience over time, to further improve our service and the resulting clinical outcomes.”

As previously mentioned, research has shown that if the top-ranked therapies that Perthera suggests are chosen, survival rates are significantly more likely to be improved.

Results Backed by Data

Beginning his work with Perthera in the past year, Gary noted that one of the first things he saw in the company was their proven approach to precision oncology, that was backed by reputable clinical research publications.

“Our Platform and service is clinically proven in the sense that it’s been delivered to over 250 cancer centers and utilized by well over 10% of practicing oncologists across the U.S.,” he explained. “It’s also proven through peer-reviewed publications that detail when physicians use the Perthera Platform, they do a better job of harnessing the power of precision medicine and they improve their patient outcomes, both from an overall and progression-free survival.”

“It’s a really exciting clinical arena and marketplace. The care of cancer patients is being transformed before our eyes. As importantly, it’s an exciting time for Perthera, because we believe we’re the only company that offers this end to end Platform, that has been proven to advance the care of patients, and also to deliver better clinical outcomes,” he concluded. “The comprehensive, end-to-end nature of what we do makes Perthera highly unique, and allows us to deliver exceptional value to patients, physicians, hospitals and biopharma companies.”

