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Harness translational informatics to maximize oncology drug research and development

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This is the second in a series of articles from [Precision Medicine Group](#) on advances in clinical trials and new strategies for market access and reimbursement.

To address the challenges that come with the massive explosion of -omics data being generated in the oncology drug development space today, big-data solutions are providing valuable insights. No matter where you are on the drug development pathway, it is critical to use a translational informatics platform to inform decision-making, save time, and maximize value at every step.

Here are 2 areas where translational informatics are making a significant impact in the research and development of novel oncology compounds.

1. **Real-time insights in biomarker-driven, adaptive clinical trials.** By combining predictive analytics with adaptive clinical trial design, drug developers can demonstrate proof-of-concept using biomarker-guided evidence in small sample sizes much faster than the “old school” method of analyzing data from large sample sizes after trials conclude. Data can be interrogated in real time to identify early

responders, optimize doses, and narrow results, speeding regulatory approval and maximizing return on investment.

2. **High-throughput data exploration through integration with public and proprietary data sets.**

Integrating high-content -omics data with public genomic databases such as GDC, TCGA, TARGET, NCBI, dbSNP, and Genome Browser turns the data generated in clinical trials into a valuable asset to inform future research and development. Researchers can run subroutines to spark additional insights, such as finding better matches between novel compounds and other genetic mutations, or guiding the development of similar compounds for drug target identification.

[The PATH Analytics Platform](#) by [Precision for Medicine](#) is a predictive analytics engine and knowledge generation solution that provides researchers with a cloud-based tool to advance research and inform decisions in real time—at all stages of biomarker-guided drug development. PATH provides dynamic, interactive charts that combine an ensemble-type machine-learning algorithm with clinical data, allowing drug developers to interrogate the genome and generate novel insights across the research and development spectrum, from drug target identification to pathway analysis and patient stratification.

[Precision Medicine Group](#) (PMG) supports next-generation approaches to drug development and commercialization. PMG provides the infrastructure and expertise to extract and enhance the long-term value of biotech and pharma products. [Precision for Medicine](#), part of PMG, works with innovative life sciences companies to accelerate drug development with clinical, biomarker, and regulatory solutions. Download our new white paper on how artificial intelligence fused with systems biology can harness the value in rich -omics data at <http://www.precisionformedicine.com/ai>.

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