Putting precision oncology into practice

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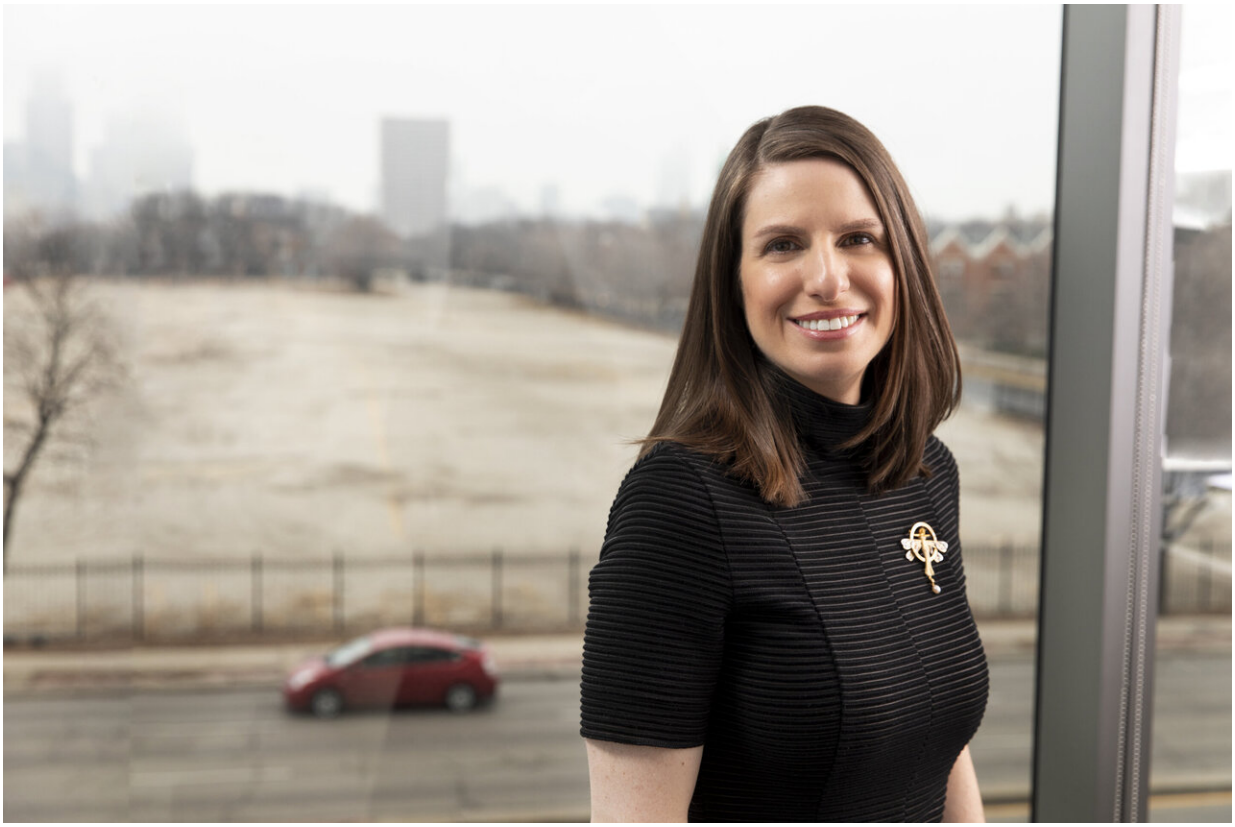


Dr. Mia Levy has pioneered making genomic tests results clinically actionable by integrating them into the electronic medical record. Credit: Rush Production Group

Rush University Medical Center is the first health care organization to launch medical record company Epic's module for genomic results, giving providers the tools they need to tailor patient care at the molecular

level. Rush will use the module as part of its Precision Oncology Center to integrate the power of genomic sequencing data into oncologists' daily workflows so they can provide the best care for their patients.

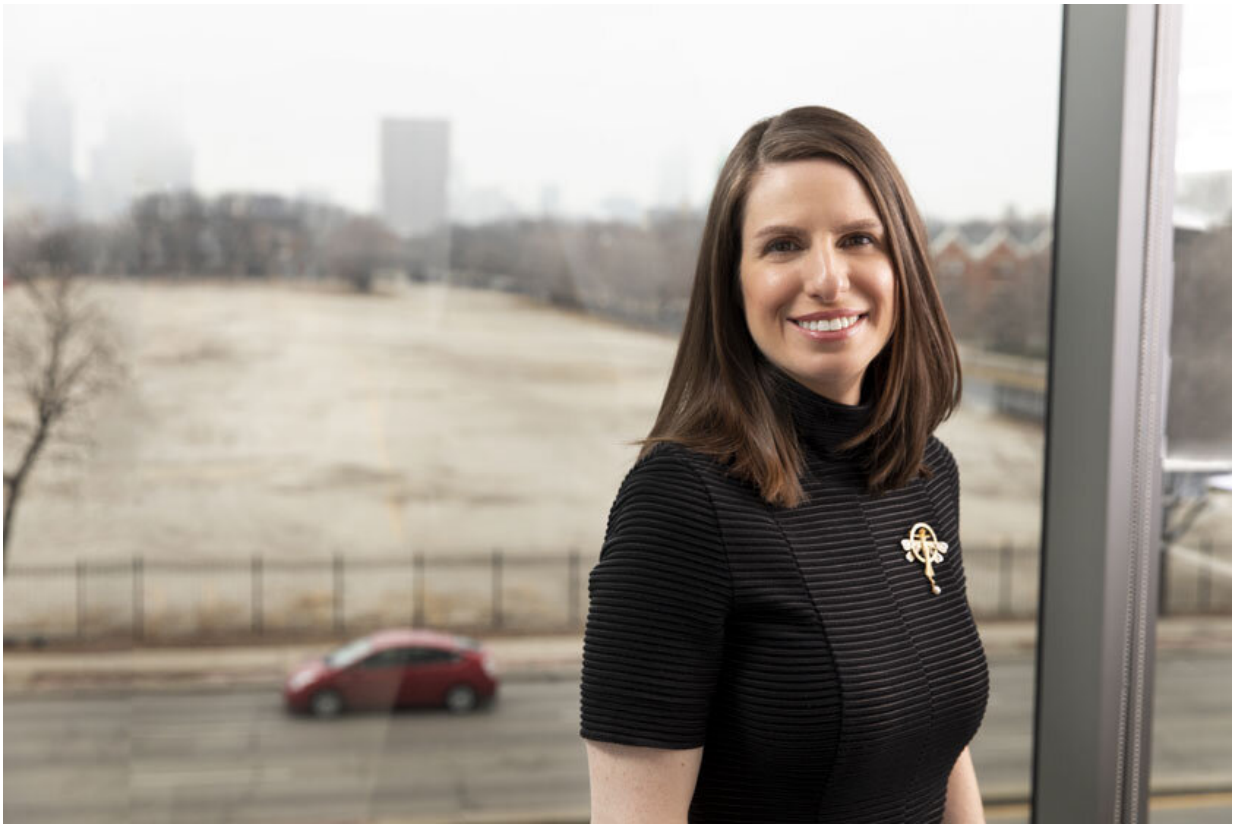
"To really deliver on the promise of precision oncology, providers need to access, interpret, and apply this genomic information where and when clinical decisions are made: the EHR," said Dr. Mia Levy, the Sheba Foundation Director of the Rush University Cancer Center and a national leader in biomedical informatics. "This new technology makes point-of-care insights and interventions possible."

The module unlocks critical data and seamlessly weaves structured results of genomic testing into the workflows of the cancer care team. When a Rush physician believes that a patient would benefit from genomic testing, the physician sends a tumor and/or blood sample to Tempus, Rush's genomic testing partner.

Tempus' broad panel genomic tests identify a patient's actionable genomic variants and yield therapeutic options—including matched clinical trials—associated with the patient's molecular and clinical profile. Tempus' report flows directly into Epic, allowing clinicians to make data-driven decisions customized to each patient. Integrating genomic data into the electronic health record provides clinicians with a single view of a patient's genomic and other clinical information.

"Until now, to the best of our knowledge, no other external lab has been able to seamlessly integrate next generation sequencing genomic testing directly into an electronic medical record as structured variant results, and we are thrilled to bring this new functionality to the market and providers with Rush," said Ryan Fukushima, Tempus' chief operating officer. "Epic's new module allows clinicians to order a Tempus test with a click of a button, and merges those test results into a patient's record, arming the care team with all the data needed to make treatment

decisions in real time."



Credit: Rush University Medical Center

Connecting genomic data with the rest of a patient's story

"Cancer is a disease of the genome," Levy said. "But the tiny changes in our DNA that allow some cells to become cancer cells also provide clues to how we can treat and prevent cancer. Connecting genomic data with the rest of a patient's story provides a more complete picture."

Levy noted that while the ability to detect and analyze those changes to a

person's genome—the complete set of genetic instructions found in their DNA—has grown exponentially in the last several years, the ability to translate that information into specific and practical therapies was limited by the structural inability of EHRs make that data part of the clinical workflow. Thus, in 2018, Rush oncologists and technologists began collaborating with Epic developers to design the genomics module.

"When developing new features, we focus on how they'll fit into the overall workflow for clinicians and ultimately provide actionable information to improve patient care," said Catherine Procknow, an Epic software developer who works on the genomics module. "Dr. Levy worked closely with us as a member of our genomics brain trust to provide guidance on how to design our module in a way that was most useful to clinicians and beneficial to patients."

The module provides a specialized data structure to enable providers—even those without a genomics background—to integrate genomics information into their clinical decision-making process. It turns raw data from gene tests, genetic panels, and complete sequencing into actionable genomic indicators, which are stored in a patient's chart.

Researchers will be able to integrate de-identified, structured genomic data into their efforts to discover new methods of predicting cancer risk, prognosis, and response to treatment. The ability to compare genomic data with medical histories and other clinical data will accelerate the pace of discovery.

"Cancer care has reached a pivotal moment when the amazing promise of genomic medicine is actually part of the daily practice of medicine," said Dr. Ranga Krishnan, CEO of Rush University System for Health. "We've long known that cancer cells contains the clues physicians need to identify treatments precisely designed according to a patient's DNA,

but few providers had the expertise to decode that information. Integrating genomic test results into the electronic medical record—where point of care decisions are made—makes the power of cancer genomics part of routine cancer care at Rush.

Provided by Rush University Medical Center