CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP150535

Project Title:
Precision Oncology Decision Support Core

Award Mechanism:
Core Facility Support Awards

Principal Investigator:
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Entity:
The University of Texas M.D. Anderson Cancer Center

Lay Summary:

Each day more than 100 Texans lose their battle with cancer. Often, the cause of their cancer can be linked to changes in the 6 billion chemical letters that make up the DNA genetic code. In most of the cells of our body, the genetic code- just like our alphabet that form the words on this page- creates a correct instruction manual for the cells that create our organs and bodies. In tumor cells, errors in the genetic code called mutations tell cells to grow faster, live longer or otherwise change their behavior. Some mutations are inherited causing a higher risk of developing cancer. Many important changes are only found in the tumor. Based on recent exciting scientific advances, some of the products of these mutations can be effectively targeted by specific drugs improving patient outcomes. DNA sequencing, the analysis of tumors using technologies that are able to efficiently read the chemical letters, is now readily available. One of the many challenges in caring for cancer patients is navigating the complex results that can come from sequencing millions of letters and trying to determine which mutations might be “actionable”: likely to drive the behavior of the cancer and can be targeted with treatments, and how those decisions change in different tumor types and whether there are trials available across the state and country. The Precision Oncology Decision Support Core will provide patient-specific reports to requesting physicians throughout Texas, summarizing the genomic alterations found in each patient, the implications for therapy selection, and the biological basis for that information. This will allow treating physicians to better tailor or "personalize" treatments and identify clinical trials that are more likely to benefit their patients. In addition, the Core will make information about cancer genomics available through a public website to ensure that the information is readily available to healthcare providers, patients and cancer researchers.