Case Study: Developing a Precision Medicine Platform Solution for Cancer Patients at a World-Renowned Hospital

Introduction
Cancer continues to bewilder even the best clinicians. While there are more than 100 types of cancer, we are learning that there are many more genetic mutations that cause one person’s tumor to be unique and respond differently to treatments that may work for others with the same type of cancer.

Advancements in genetic testing have allowed clinicians and researchers to better characterize types of tumor, specific mutations and then tailor treatment regimens to save time and money. Simultaneously, genetic sequencing costs have decreased significantly, while the speed of analysis and generating results have increased. With this alignment, academic and healthcare organizations have been migrating quickly into the arena of precision medicine.

In theory, if cancer care is going to make advances in care on a global level, information sharing is crucial. But how do you achieve this level of collaboration when sharing health data may compromise a patient’s confidentiality, privacy rights or HIPAA regulations in a highly competitive biotech and pharmaceutical marketplace?

A large, hospital group in Manhattan faced this challenge and found a viable solution with the team that became Genotech Matrix.

Challenge
By treating more than 10,000 cancer patients annually and offering comprehensive services for cancer patients, this globally recognized leader in clinical medicine and scientific research continues to rank high among the top cancer hospitals in the United States.

In keeping with this leadership position, this organization wanted to implement their own precision medicine initiative and move away from having to outsource their cancer genetic sequencing process and patient database management.

Solution
For this initiative to take flight, their organization convened a team of bioinformatics experts, clinicians, genetic counselors, information technology leaders, who would orchestrate the requirements to launch this offering. Among the many components this enterprise needed to function effectively and efficiently was a supplementary knowledgebase of existing cancer data which would include a library of mutations and appropriate treatments to compare their own patient data.

Multiple companies were invited to showcase their products for enabling this hospital to achieve its vision of creating a Clinical Cancer Genome (CCG) Platform, but ultimately only one company offered a solution that gave this prominent institution the flexibility of owning their own patient database, leveraging their own core capabilities while staying current with leading clinical oncology research.
This team was able to integrate Vishuo Biomedical’s core product iCMDB® (individual Clinical Medicine Database) knowledgebase for cancer within the organization’s own clinical cancer database. iCMDB® is an integrated sequencing analysis and annotation platform which empowers clinicians to conduct personalized care based on a patient’s genomic profile.

This database allows for genetic analysis of key solid tumor diseases such as non-small cell lung cancer, colorectal cancer, melanoma, glioma and liver cancer and helps develop a personalized treatment protocol based on a patient’s genetic and pathology profiles.

To ensure proper management of patient data, any confidential personal information is protected and encrypted by deploying an on-site server installed with the iCMDB® platform and customized analysis pipelines to generate automated data quality reports and clinical annotation reports for supporting clinical decision-making.

In addition to integrating iCMDB® into this organization’s database, their in-house team of experts developed a personalized workflow that allowed for report generation specific to meet the needs of their oncology clinicians. Since its implementation in 2016, more than 2,000 oncology patient samples and reports have been sequenced and generated, respectively, to help provide a more efficient and personalized approach to their cancer care.

Genotech Matrix is proud to partner with Vishuo Biomedical to bring iCMDB® and a portfolio of bioinformatics solutions for advancing precision medicine to the broader United States healthcare marketplace.

Find your precision medicine solution at GenotechMatrix.com.

Genotech Matrix, a New Haven, CT based healthcare technology company founded in May 2016, is focused on delivering superior bioinformatics and precision medicine solutions that provide accurate, efficient and cost-effective results to biotechnology, hospital and pharmaceutical industries to improve the health of patients worldwide.

Vishuo Biomedical is a Singapore based healthcare technology company dedicated to establish personalized medicine for prognosis, diagnosis and treatment. It delivers genomic sequence analysis to research institutes, health screening clinics, hospitals and pharmaceutical industry. Its core product, iCMDB®, advances customized analysis of diseases on molecular level.