

# The MyCancer Outcomes AI Platform Improves Personal Cancer Prognostic Accuracy and Recommends a Better Treatment Option

**Client**  
PotentialMetrics is an advanced healthcare analytics company, providing personalized and predictive AI platforms

**Services**  
Product Development, DevOps, QA

**Industry**  
Healthcare

**Tech**  
Laravel 6, Vue.js 2, MySQL, Selenium, Docker, AWS

## Challenge

Millions of people are diagnosed with cancer each year. And every case of cancer is unique. Yet, physicians don't have access to relevant evidence to deliver personalized treatments and data-based cancer care. Furthermore, patients cannot benefit from the experience of millions of other cancer sufferers.

Our client was looking for an assisting development team to launch a game-changing AI platform that would turn their extensive patient-reported outcomes database into a robust clinical decision support system.

## We took on the following challenges:

- Develop a scalable web service from scratch in 7 months
- Provide infrastructure support through Amazon Web Services (AWS)
- Optimize MySQL database structure
- Conduct database analysis using SQL Server, MySQL, and Amazon Relational Database Service (RDS)
- Develop the algorithm for generating reports
- Integrate DevOps into the development lifecycle. Set up a CI pipeline for the project and incorporate web app testing into the development cycle
- Convert existing code to Laravel framework
- Build an API to communicate with the client database

## Solution

- The AI-driven platform is a web-based portal designed to collect, manage, and present patient-related data for newly-diagnosed cancer sufferers at the time of diagnosis and throughout the entire survivorship experience.
- The web app consists of three integrated components: the MyInsights module – a predictive analytics and decision support system; MyCommunity – a moderated social network where patients can share their experience and seek for support; MyJournal – to record evidence and document a cancer journey.
- MyInsights is an interactive predictive tool that generates visually compelling survival curves for newly-diagnosed oncology patients. To enhance its predictive algorithms, multiple patient-specific factors such as patient age, gender, comorbidity, cancer site, cancer stage, tumor grade were added.
- A user-friendly interactive web questionnaire to allow new oncology patients to specify their conditions in a hassle-free manner. There are also various easy-to-use report generation options that allow patients to print or download a report as a pdf file.
- The platform was endowed with the capability to monitor the patient's experience over time, thereby providing a unique insight into the patient's conditions and functioning.
- A 360-degree IT service implementation: from back-end and front-end development to UI/UX, from architecture optimization and database support to QA and DevOps integration.

 [MyCancerJourney](#)  
[Watch the video](#)

## Impact

- With access to real-world patient-reported outcomes instead of limited trial-based data, physicians can offer more personalized value-based cancer treatment plans
- The AI platform empowers patients by providing value-driven information on survival, quality of life, functioning, and cost of the entire cycle of care
- MyInsights that permanently processes up-to-date information on a patient's condition may provide critical insights for making prescriptive decisions.
- Patients are participating in data gathering that will become a sort of collective wisdom. This can lead to profound improvements in cancer care
- The platform reduces the rate of misdiagnosis by employing Machine Learning. ML can distinguish patterns that can be neglected by human clinicians.

"I have engaged ITrex in many different projects. The team has delivered a number of high-quality enterprise-level software solutions which are at the heart of our business. They are capable, hard-working and flexible. I have implicit trust and confidence in them."

Jeff Block  
VP of Process and Technology,  
PotentialMetrics, Inc.

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