



Remote Patient Monitoring using Smart Phones & Tablets

Neutrino RPM is an innovative way to connect patients with their healthcare providers to communicate periodic updates on their condition between visits. It includes a proprietary survey engine that generates a set of targeted questions customized to the specific history and condition of the patient. An easy to use mobile app, that is available for most Apple and Android smart phones and tablets, asks patients to respond to these questions from the comfort of their home.

The Neutrino engine inspects the information collected on patients' symptoms on a daily basis and subsequently alerts the healthcare provider and/or the caregiver, if significant change in symptoms is noted. At the patient's next visit, the doctor can pull this information in the patient's dashboard and obtain an extremely rich and accurate picture of the patient's condition since the last visit, resulting in a consistent monitoring and management of the patient.

Customer
Neutrino Medical

Industry
Healthcare

Offering
Software Product Development

About the Client

Neutrino Medical, formed by experienced cardiologists, provides remote healthcare monitoring and alert services utilizing commercially available mobile phones and tablet devices.

Patients' Monitoring Challenge

Patients with chronic illnesses, especially those with cardiovascular disease like heart failure, who have recently been discharged from the hospital require continuous monitoring of their symptoms. Presently, this requires either visits by nurses to patients' homes or the nurses making weekly phone calls to assess their condition. Alternatively, these conditions are monitored during the scheduled visits at healthcare provider facilities, yet those visits are usually not frequent enough and do not provide doctors the trend at a granular level. Moreover, the history communicated by the patient is dependent on patient's ability to recall and is not always accurate or complete. The price paid for poor monitoring can be re-hospitalization.

Mobile App as the Solution

Neutrino Medical's founders, who are practicing cardiologists, understood this gap too well. They recognized that a mobile app in the hands of a patient can help collect much needed information about the patient's condition and this information can be monitored. They also understood the challenge of such an app to be successful: for the patient it should be extremely simple to use yet it should be fairly comprehensive to be useful for the doctor.

To address this challenge, they partnered with Techlogix to develop a state of the art solution that leverages suitable technologies to effectively meet these objectives.

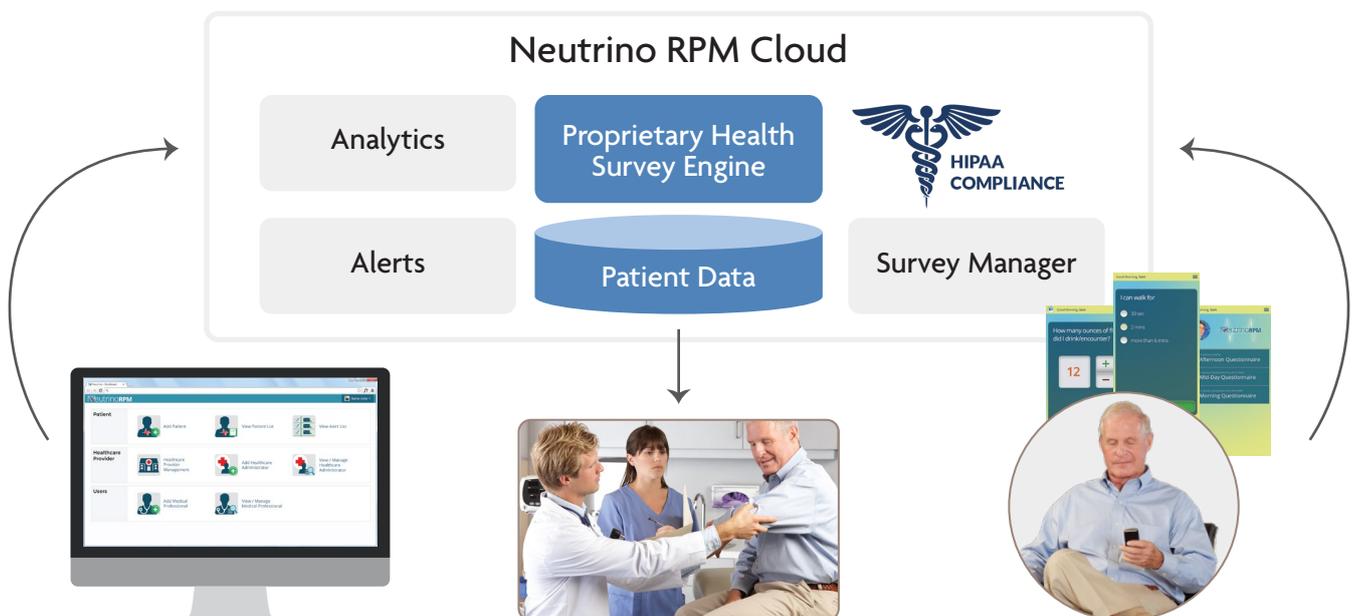
Simply Delightful for the Patient

We realized that the app should be extremely simple to use for the patients. Further, the questions asked in the survey should be targeted to the unique situation of each patient. Ideally, the app should also provide some benefit to the patient so that the patient is motivated to use the app.

The application met these design goals as follows

- Our design team developed an interface design that presents the questions one at a time and makes them visual where possible, e.g. via emoticons and widgets for adjusting quantities.
- Neutrino's survey questionnaire engine is the brains behind the app. Encapsulating the expertise of cardiologists, the survey engine is designed so that the most relevant questions are posed to patients. The result is a very personal experience for patients.
- The app serves another useful purpose of sending timely reminders to patients to take their medications. This is a great service to patients and serves as a reminder to respond to symptom-related questions as well.

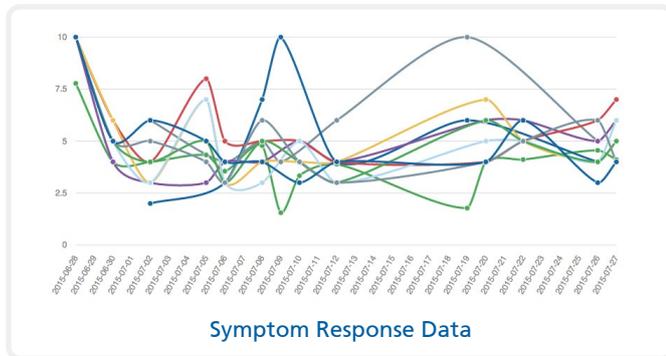
The app includes an easy to follow video tutorial as well as popup help to guide patients to enter their data accurately.



Analytics for the Doctor

Designed by doctors, the ultimate purpose of the app is to help healthcare providers improve their patient assessment by providing them critically important information since the last visit. This data is made available to the healthcare providers in a variety of formats to help achieve the goal:

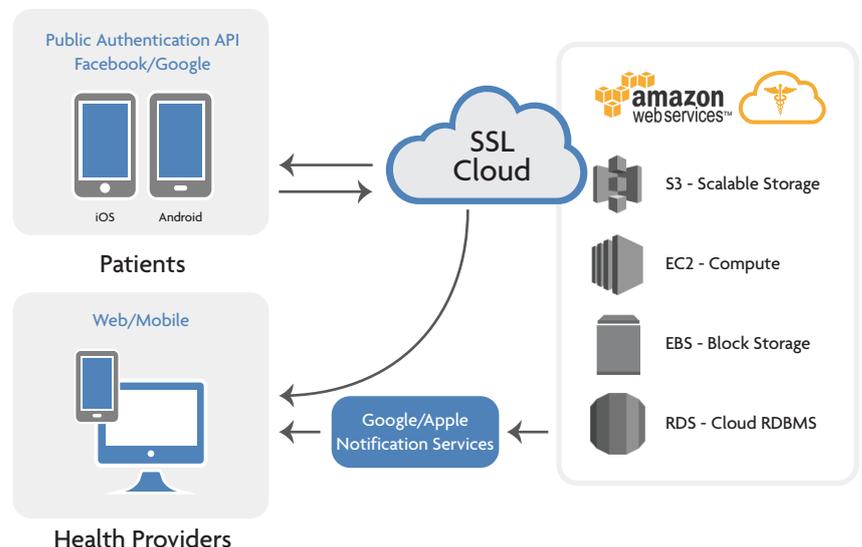
- A daily snapshot of a patient's current health condition is available on the healthcare provider's web portal. This includes a health indicator metric that represents a weighted aggregation of the responses to the questions.
- Healthcare providers can identify trends by plotting historical data over time and also drill down into details.



Connecting Providers and Caregivers with the Patient

Healthcare providers routinely review the data as it is being collected to monitor the condition of their patients. To assist them, the Neutrino RPM monitoring technology continuously evaluates the data received and if the health indicator shows a potential health issue, it automatically generates an alert to the provider.

Missing data is a cause for concern. So, if the patient is not responding to the questionnaires, either their healthcare provider, or a designated family member or caregiver, is alerted.



HIPAA Compliant

Neutrino RPM and Techlogix take the security of the Personal Health Information (PHI) seriously and have taken necessary steps for the application to be fully HIPAA Compliant:

- No PHI is stored on the mobile device and access to PHI is only via authentication
- All data - stored on in-transit - is encrypted
- Detailed audit trail and logs are maintained to ensure that data has not been accessed or modified in an unauthorized manner

Technology

Neutrino RPM is cloud-based mobile application that is available to healthcare providers in Software-as-a-Service (SaaS) model. The technology architecture allows the application to scale easily while using industry standard components and consistently provides a simple user experience.

The application is built on the Amazon Web Services cloud platform utilizing their computing, database and storage technologies. The patient app is available for iOS as well as Android. Public Authentication API's from Facebook and Google are used for logging in the patients. Notification services from Apple (APNS) and Google (GCM) are used for alerts.

“Working with Techlogix for developing a system for remote monitoring of heart patients, has been an excellent experience for Neutrino Medical. From the initial design concept to the final implementation and launch of the app and web portal, Techlogix was fully vested in the project to complete on time and within the budget. The Techlogix team of top notch developers ensured a smooth implementation of iOS and Android platforms.”

John Pargulski
Co-Founder & COO

Software Product Engineering

www.techlogix.com/software-product-engineering

Techlogix provides technology development teams that can address the full product lifecycle including conceptualization, detailing of functional specifications, user experience design, software development, testing and verification, release management, product maintenance and support activities. Our SPE practice covers engagements ranging from complete platform development to specific module development to targeted enhancements on existing products. Developing complex, high performance web scale platforms with multiple front ends including mobile and HTML is a particular focus area.

Contact

For more information, contact info@techlogix.com



About Techlogix

Techlogix is an IT Services, Consulting and Business Solutions company that helps its global clientele achieve enterprise transformation by harmonizing people, process, and technology. Techlogix builds high performance solutions using practice-specific delivery methodologies that utilize its globally distributed development teams. Our people combine the spirit of engineering excellence with a strong commitment to end-to-end customer experience. Techlogix employs approximately 300 people in 5 delivery centers worldwide.

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