



# CASE STUDY

## PCL Healthcare App



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## Beginning Requirements.

With the advancement of technology, ease of access and the world becoming smaller with air connections, people have started relying on automated health reports, created by tracking the health scores via a mobile application, and one such company is our client.

The aforementioned company has been in the healthcare industry and wanted to build a new web application and mobile applications (iOS & Android), along with the modules for clinicians, since it is the USP of the system. A clinician can check the vitals of any Patient/User at any time and can recommend them the required/updated medications, based on the health reports. We delivered them the required solution with a mobile responsive website and the applications to go with it.

The principal purpose of the application is to manage the health records of the patient. In the mobile application, the user will be able to check the health score, vitals, add medical reports and, add medicine for medicine reminders. The admin will be able to add sub-users to the application. A patient can share their health score and medical report via external sources like Gmail or WhatsApp.

The objective of the Web application is to manage health records by the patient. The web user can calculate new scores & do Continuous Vital Monitoring.

# Challenges Faced and Solution Proposed

- **Storing and maintaining health data of all the users**

We used “Azure API for FHIR” to store and maintain the health data of all the registered users.

- Azure API for FHIR meets HIPAA regulatory requirements and is ISO 27001–certified.
- Azure API for FHIR lets you quickly connect existing data sources, such as electronic health record systems and research databases.
- It is used to simplify data management with a single, consistent solution for protected health information (PHI).

- **Integrating custom SDK of devices**

We have an integrated Smart Watch. All the health data will be fetched from SmartWatch and will be pushed to the server to maintain the precise health reports of all the patients.

- **The clinician should be able to fetch the recent Vital records of their Patient**

We have used a Push Notification server that will notify the clinicians about the health status of their patients. If needed, the clinician can ask their patients to push the recent vitals that will be fetched by the clinician.

We are also using “Azure Event Hub” for the same. The raw data will be pushed to the Azure Event Hub and it will further process the received data.

- Azure Event Hub is being used for storage purposes so that no package is being missed by the system.

- **Reporting and Analytics**

We have used ADLS Gen2 for Reporting and Analytics purposes.

- When making data-driven decisions, time is everything. ADLS Gen2 provides best-of-class storage performance, resulting in less computing resources needed to extract data to be analyzed.
- Azure ADLS Gen2 provides an elastic, scalable environment that can easily adapt to the ever-increasing volume of data that needs to be analyzed.

## End to End Technical Solution

- **Dynamic approach**

We proposed and have integrated all the features in the system and enhanced the usability & user experience of the system by making it more dynamic. The team enhanced the existing backend also to achieve the app's features.

- **Quality Assurance**

We have performed different types of testing to ensure the delivery of a quality end product. Different testing conducted was Functional, device, regression, and performance testing. Our team made sure that all the gaps are identified in the testing process and the development team fills those gaps with an optimal solution.

- **Documentation**

The team has prepared user manuals, SRS (software requirement specification), wireframes and project plan, change request document, system design approval.

- **Server Infrastructure**

We are using Azure to host the system which is beyond level secured. S3 is reliable and secured to host the static pages and store the legal documents. Database accesses are not public. These all the facts make the system secured.

## Benefits We Delivered

The project development is solely based on the Agile Work methodology and Scrum architecture. This raised our projects to a peak level of quality, security, profit, promotion, etc. We design, build, configure, test and then release the potentially shippable project increment. This process cycle is also performed in an iterative manner or sprints.

### **Listing the major benefits gained by the system:**

- Easy to use - The healthcare mobile & web apps are easy to use and offer high convenience with time and effort saving for the customers and drivers.
- Real-time tracking - The healthcare system is equipped with real-time tracking functionalities so that the patients and clinicians can track patient's vitals and health reports.
- Efficient Management - Everything is managed by the admin panel. Admin user can manage Patients' and Clinicians' modules.
- Book a Demo – Patients can book a Demo with a Clinician, in case of any health requirements.
- Predictive Algorithm – The Predictive Algorithms of the system can discover unknown health conditions and pick up problems before they become severe.

# Technical Architecture



Source: <https://docs.microsoft.com/en-us/azure/architecture/solution-ideas/articles/security-compliance-blueprint-hipaa-hitrust-health-data-ai>

## Technology Specifications

Frontend		
Platform	Supported Versions	Language
Website	The latest version of modern browser	.Net
App	Android and iOS	Swift, Java/Kotlin, MS SQL
Project Name	PCL Healthcare App	
Web URL	<a href="http://app.pcl-health.com/">http://app.pcl-health.com/</a>	



## Why Dotsquares

**Dotsquares are an international creative digital design and development company striving to make your vision a reality.**

We thrive on seeing ideas grow. Since 2002, we have been working with individuals and global brands to embrace the evolving digital industry.

We are big on trust, reliability and mutual respect so we will take the time to understand you, your product and your business. We work closely with all our clients and are always looking to forge ongoing trusted relationships.

Taking your IT project offshore allows you to cut down on the costs whilst maintaining a quality that onshore companies struggle to match.

We take the pain out of your IT projects and let you concentration the business you know best: Your own.

## What we do...

### WEB



Our web development professionals bring years of experience to meet both the business and technical requirements of a project.

### GAMES



Our game developers use platforms such as Unity, Maya, Cocos2D, Unreal, ARKit, Maya, Max, and more to create the best gaming experience.

### APPS



We provide cutting-edge mobile app development that can efficiently and creatively meet current business demands.

### CRM



Each company is different and we can create bespoke CRM systems to manage your client relationships in the most efficient way.

### DIGITAL MARKETING



The industry is becoming saturated. Using methods like SEO, SMM, PPC, and Google Ads, our marketing experts can give your brand a voice.

### IT SUPPORT



Server support, network troubleshooting, remote installation, our hosting experts are on hand 24/7 to keep your business alive.

## Portfolio

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INSPIRED TO TRAVEL

Virgin australia

**BOSE**  
Better sound through research®

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DONUTS  
AMERICA RUNS ON DUNKIN'

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Orlando attraction tickets  
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You know what to do.  
**bookit**

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Take Control of Your Health

NHS

**Autarky**  
AUTOMATION



LUXURY VEHICLE COMPONENTS

YANKEE  
CANDLE®

You'll go far...  
usrentacar.co.uk

INDIVIDUAL  
RESTAURANTS

 Learning Plan

## What our clients say

### Daniel Ox

Ocean Holidays Group  
UK

*Significant cost savings can be made working with an outsourced development company you can trust. Dotsquares have an exceptional team of quality engineers who work quickly and are always aware of deadlines."*

### John Wussah

Education & Training Company  
Australia

*"You have been one of the best developers I have ever worked with. You have excellent technical and interpersonal skills and you got my website development and design project is done to my amazement and satisfaction!"*

### Brian Riback

New York Daily News  
USA

*Dotsquares went beyond the requirements. The Team is amazing and working with them is a winning formula. I feel extremely lucky to have these gentlemen on my Team with their unyielding dedication to excellence."*

## Affiliations

