

Overview:

As per our client's needs, we built a PHR product for them that they offered as a service to their members to manage their personal medical records. These records could be accessed from multiple providers by integrating with their EHR systems, e.g. Allscripts, and are organized in secure and private online accounts mapped to these members. These records can be accessed from anywhere and at any time with an internet—enabled cellphone, desktop, a PDA or even a USB drive. Overall, the intent was to enable members of this product to have complete control of their digital health profiles and use them to their advantage.

Work done for this client involved the following:

- Building a Secure, Private, HIPAA-compliant Patient Portal
- Integration with different EHR systems using HL7-interfaces/APIs/SDKs: e.g. AllScripts
- Integration with 3rd Party DICOM viewer
- Authorize.Net integration Billing/Payments
- USB/Pen drive capability, WinForms/Desktop App
- iOS Mobile App, a PHR app to access records, contacts, pharmacies, providers etc.

Client details:

Name: Confidential | Type: Healthcare | Location: USA

Technologies:

.Net, iOS, WinForms, AllScripts Integration SDK/API, HL7 v2.3

Project Description:

We built a web-based solution to store Patient Health Records of people. This service could be availed on a subscription basis, and allowed people to collect and manage all their medical records in an organized way and in a single repository that would get updated automatically from time to time. With this measure, the benefits are many. For e.g. it is possible to gain real-time access to information at the time of appointment, in matters of emergencies, to avoid administration of unnecessary and redundant



tests, expedite diagnostic and treatment plans, and remove possibilities of medical errors. Plus, there is the added advantage of having all of this information private, secure and safe from any physical damage or loss.

Patients availing this service have the privilege of accessing their accounts through a patient portal to see all their digital health records. In order to make this process extremely convenient, the team@Mindfire ensured that the UI/UX designed was highly intuitive and easy-to-use.

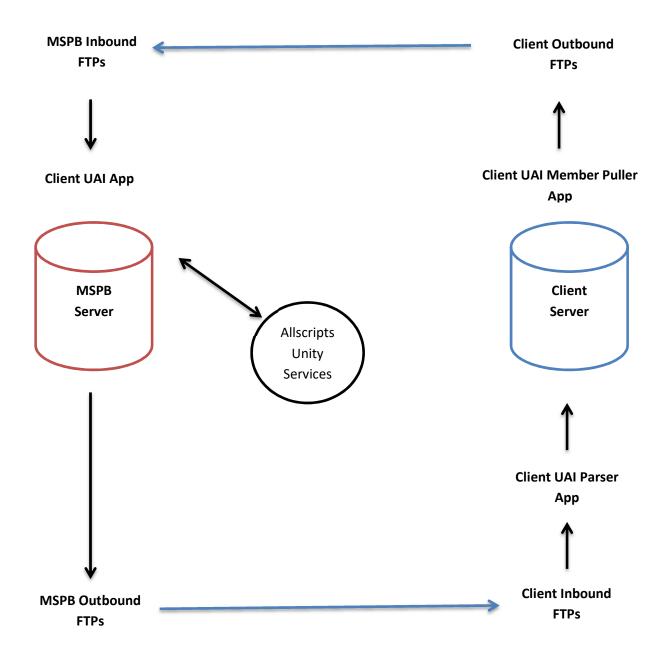
The overall success of this service was hinged significantly upon the ability to pull medical records in a secure and seamless manner from multiple providers, who use different EHRs. To implement this functionality, our technical experts needed to work closely with the IT teams of the providers/EHR vendors to understand the structure of the data that would get exchanged and to finalize on an HL7 format that was acceptable to both the parties. But, since data coming from different EHRs were not expected to have the same format, the team@Mindfire also developed the functionality to parse the incoming data before mapping and storing them correctly in the database.

For example, one such integration involved transmitting the HL7 2.3 Results Message (ORU) using a secure and encrypted FTP connection on a weekly basis. This weekly process was designed to be scheduled every Saturday evening at 8 PM Eastern time. Patient Data from the EHR vendor was grouped under certain heads and submitted in the HL7 Results-message. This grouped data had a one-to-one mapping with data fields in our client's database. The following reflects this:

EHR (Provider)		Client
Medication Allergy	→	Medication Allergies
Family history	→	Family History
Food allergy	→	Food Allergies
Medical History	→	Medical History
Medication History	→	Medications
Surgical History	→	Surgeries



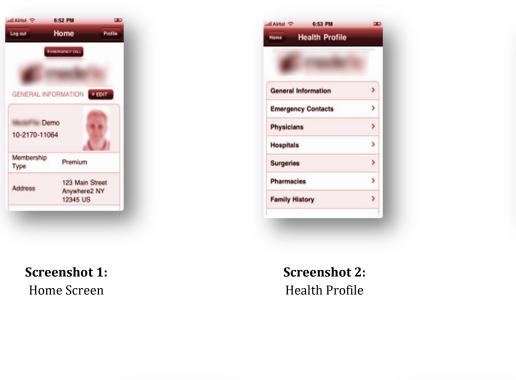
Architecture:





Screenshots

Mobile:





6:56 PM

Medical Check List

Do you or have you had any vision or eye (Ophthalmologic)

Medical Conditio

Yes

Screenshot 3: Medical Condition

Family	H	isto	A			
Medical History Not Known	N	N	Y	N	Y	
Anemia	Y	N	N	N	N	
Heart Condition(CHF, anginia, heart attack)	N	N	N	N	N	
High Blood Pressure	N	N	N	N	N	
Diabetes	N	N	N	N	N	
Asthma	N	N	N	N	N	
Epilepsy, Seizure	N	N	N	N	N	

Screenshot 4: Family History



Screenshot 5: Sample Medicine Details



Web:





Screenshot 1: Dashboard

Screenshot 2: Digital Profile Update



6			1	- 5- 8	
-	Resource day			***	
S and the		And for family 1919			
of spenie new			-		
8	Base Pressor			0.00	
and loss					
2 months	-				
	1		1		
Real Property lies		100 mil 100 mil	100 C		
Transa .				and the second se	
Repairing Nam	1				
Termin Response			** **	** **	
Rang Youth	The second				
Parameters.					
-	TAXABLE PROPERTY.				
- Annalises				Tep 1111	
C) restantes			00010.0	10.000	
4 mm hrm					
and the		-			
-	-	-			
	1000	-	-		
Access * Long	-	-			
tag an	armet	-			
	1000		-		

Screenshot 3: Medical Records

Screenshot 4: Healthy Lifestyle Tools





Actually Digital Health Profiles *	Surgerie		Common tasks						
-	Provide etc. (4)	Provide all later, restored or freque at, convelle a large.							
Conservation Contains Processory Contains Healthcare Providers & Facilities	-	forgets bare	Partnersed for	Partness at		C Ger Handtin Bergende C Seit Remender O Lipbend in Ter			
matures E	24 perce 2012	Now pit	(n Johnson	ter mught	Desite .	M Add a Provider			
Mediat Carellions Altergets	(released	ment Surgery	Dr. Johnsmann	All Harpha	Death	C force Medicatives			
Surgeren & Pransform 🖬	-	Cyrel Detraction	Dr. Johnsteinen	ar make	treate.	Helpers			
increase in the second	24 june 2012	Cyre Detection	Ex.20temproam	NY Hopks	trate	B. Multan Calar .			
Medica Calendar									
Chipter Records	+ 400 Million	AGEN OF PROCEDURE				Max Litrager +			
Vite Documents Healthy Lifestyle Tests						 Versitions Text a record 			
um tanta m	Add a new	w Surgery or Pro	ettre			Myre McCarley -			
Hospitchicky Manu	Surgery tops								
Ordinational									
Datastan Management	Performed in					FRO			
0.404			100						

Screenshot 5: Segregation of Docs

Screenshot 6: Surgery & Procedure details



E Anny L Dynamoto Portu - Denne	Family History Measure of telescond taget is converte a taget.								Common tasks
- Service Info	F False: M Moles: 5 Salesy OF Any D			Ary					C Set Renorder
- Manhamman B	concinents		-	5		-	-		E Ant a Provider
- Margan	Wedon Hatory unknown		~			~			C Sync Madedine
- Surgerian & Proceedures EB	-					*			mapers
- 10,000	Address					~			-
Medica Calendar	Datates		*			~			B move Core -
Digital Records	Epilopey Sectore	*							A tree states
· Handling Laboration Theolog	Gaucera					-			E ford a recorder
Custom tests .	Heart condition (CHP, Angina, Heart allactic		~			~			Mys McCarty -
· mapping man	High Bland Person		~			~			+
Ordenteral	Martin Press	~						۲	
Clubeten Management	Perkingen's Dramas		-						F80

Screenshot 7: Insurance Details **Screenshot 8:** Family History