Mission Health Telehealth

Development of a Telehealth product

Objectives

- Modify the current SunTech 247B vital signs device to add an iPad tablet device on a flexible, adjustable arm/mount.
- Design the adjustable arm/mount to be secure to prevent theft.
- Find an amalgamation of vital signs devices (or sensors) which will be needed to provide these measurements either directly or indirectly to the tele-health provider along with a mobile tele-video communications device over a HIPPA compliant transmission.
- Implement a solution to integrate the measurement of vital signs into a telehealth-based iPad app so those measurements can be delivered to a physician.

Requirements

Req #	Requirement	Description
1	Modification	Implement an adjustable arm to hold tablet
2	Gather Data	To fine tune a portable tele-health product
3	Explore vital signs sensors	This will eliminate the need for a stand-alone, vital sign's monitor
4	Durable	Able to withstand continued usage
5	Precise	HIPPA Compliant

Concepts

- Provide software to establish two frames of video for doctor and patient interaction.
- Develop an iOS App to facilitate the integration of the Vital signs device with an iPad.
- Integrate the vital signs measurement device with a tablet using Bluetooth capabilities.
- Incorporate and securely attach a tablet mount onto the Suntech247

Problem Statement

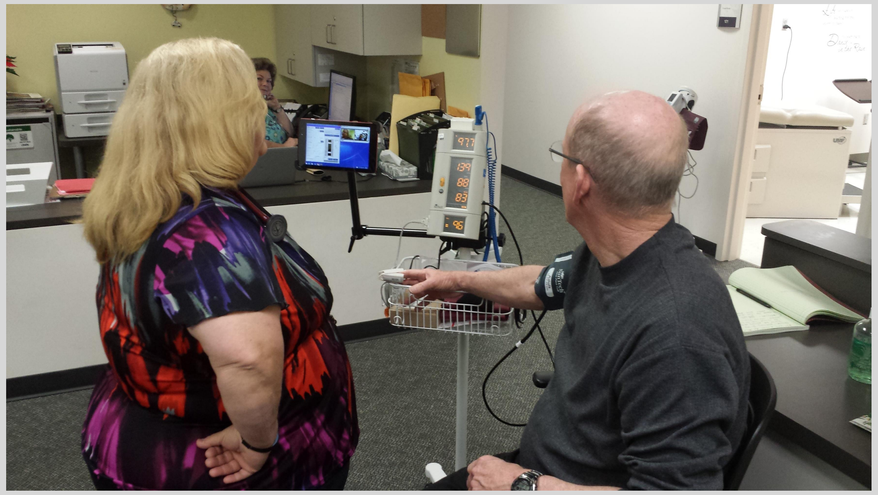
Nationally, the Affordable Care Act will potentially add 41 Million people to the US primary healthcare system. This will potentially overwhelm the number of primary care physicians in the US requiring other processes and methodologies for preventative healthcare. In the last few months, multiple telehealth mobile apps have appeared on the market facilitating consults with family practice physicians. One app already has over 3 Million users.

However, these telehealth video consults are hindered by the absence of the patient's vital signs measurements to aid in the physician's differential diagnosis. Vital signs measurements include blood pressure; temperature; pulse rate; blood oxygen saturation (SP02); weight; sinus, ear, and throat examination via an otoscope; and heart, lung, and bowel auscultation with a stethoscope).

An amalgamation of vital signs devices (or sensors) is needed to provide these measurements either directly or indirectly to the telehealth provider along with a mobile televideo communications device over a HIPPA compliant transmission.

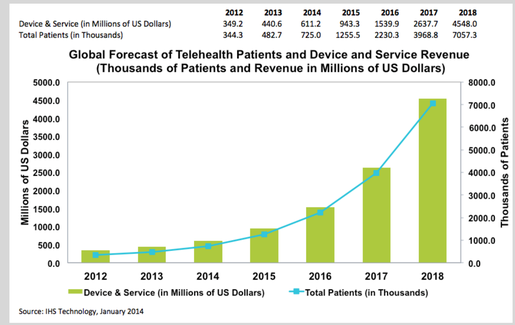
Final Design

The finished project consist of using a SunTech 247B vital signs monitor and a Dell Venue Windows 8 tablet running the VitalShare software from SunTech Medical. The tablet is able to connect wirelessly via Bluetooth to the SunTech 247B vital signs monitor and with the VitalShare software it is also able to retrieve each of the readings, temperature, systolic and diastolic blood pressure, heart rate, and SpO_2 from the SunTech 247B. After retrieval of the vital signs parameters the VitalShare software can compile a HIPPA compliant patient report to one of numerous file types. These reports can then be easily delivered to an EMR or another physician from the Dell Venue tablet.



Results

	2012	2013	2014	2015	2016	2017	2018
Device & Service (in Millions of US Dollars)	349.2	440.6	611.2	943.3	1539.9	2637.7	4548.0
Total Patients (in Thousands)	344.3	482.7	725.0	1255.5	2230.3	3968.8	7057.3



Various market research organizations peg the telehealth market growth rate between 18-30 percent per year. According to Ken Research, in 2013 the market for telehealth generated annual revenue of $9.6 billion, which is 60 percent growth from 2012 when overall revenue was $6 billion. Their research shows that the telehealth market is expected to grow to $38.5 billion in revenue by 2018, a compound annual growth rate of 32 percent from 2013-2018. This team's project developed a competitive telehealth product that has the attention of a few customers that are looking to purchase 10 to 12 units (collectively) in the near future.

Team & Acknowledgements

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