

OnBoardID

A way to minimize patient paperwork prior to appointments, including medical history and consent to retrieve patient records from other providers.

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Executive Summary

The problem that stems from the creation of this software solution that provides doctors a more efficient process for seeing patients is incredibly a huge money saving method. These doctors that have their own independent clinics do not have any of the monetary or human resources to pay for technology development that can enhance or speed up the traditional process of scheduling patient appointments and seeing patients. Products on the market have mostly just a digital pre-registration platform but they don't extend beyond that in features. OnBoardID is a holistic way of alleviating the straining process for patients and doctors at independent clinics. This low cost solution is meant to be an affordable and eye-catching service by 95% of independent clinics because only the extremely small clinics that don't have a constant stream of patients will be able to continue their operations without the exact need to become digitized. As the population of the world grows, clinics will evidently have more patients and may have to consider our SaaS product.

The ultimate business strategy would be different sized monthly plan options for using this software service. As the size of the clinic increases, the more the monthly plan cost would be. In essence, we do this because we have to manage increased server requests as well as more time urgent problems that need to be resolved, if any. A independent primary care clinic on average sees about 3 patients an hour and roughly about 24 patients a day. Seeing even an additional patient every day, would accumulate in savings and would mean more revenue in the pocket for doctors. But if we also consider the value proposition of current patients being rushed out of the door because of the lack of time a doctor has, then with this service, we can eliminate patients who may be confused of the instructions a doctor has provided, and this prevents unnecessary return visits for the same problem for the same patient. This, again, is another avenue for boosting efficiency to the patient to doctor relationship.

The proposed product is meant to provide a dedicated web portal for doctors to view all their patients' profiles and also have various abilities to manage appointments. The web portal serves another purpose of being the controller and editor for what is displayed on the iPad at check in as well as what is displayed on the pre-registration web form. Doctors are able to assign different administrative roles and tiers for employees at the clinic so as to restrict access to certain patient information when not required for a given job at the office. Additionally, there is an OnBoardID iPad app that provides the in-person patient sign in experience at the clinic for every patient that walks in—new and returning. Another packaged software product that comes with this service would be the mobile app for both patients and doctors, but essentially it allows doctors to check in patients, add digital notes to a patient's profile for each visit for the patient to refer back to when they forget, view a patient's profile for past medical history and charge co-pay. On the patient's side, they are able to use the OnBoardID mobile app to view co-pay charges and doctor's notes, as well as update any of their profile information, as long as their local doctor's office is subscribed to one of OnBoardID's monthly plans. We currently have a stand-alone prototype that allows us to mimic both the patient and provider experience when using the actual application.

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1. Business Introduction

Doctors are spending as much time writing or typing about patients as they do seeing them. Studies show that filling out patient paperwork takes up as much as a third of a doctor's workday. This paperwork burden contributes to deteriorating professional morale and can also result in dangerous fatigue-induced errors. While this has become a nationally recognized problem, resulting in the increasing presence of electronic medical record (EMR) systems, illegible handwriting, fax machine issues, health care provider medical record layout conversion, and elongated time consumption are still pervasive problems. There is a serious need for minimizing the paperwork burden on doctors prior, during and after appointments. According to a study by the Johns Hopkins University, medical interns spend approximately 12% of their time interacting with patients and 64% of their time on indirect patient care such as placing orders and filling out electronic paperwork [1]. And an innovative digital solution that features human-centered design components does not exist on the market. A holistic solution to digitizing all paper documentation will streamline healthcare for patients and significantly reduce administrative burden on doctors, making fatigue-induced errors less likely.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) dictates the legal parameters of retrieving medical information with prior consent and protecting the privacy of patient medical data. A solution that streamlines and digitizes medical records will have to be HIPAA compliant and extremely user-friendly to encourage higher adoption rates by medical providers. The potential users of this type of application include medical providers and staff, patients, and insurance companies.

2. Clinical Need

Findings from interviews with medical providers and patients clearly demonstrate a need for an application or platform that allows information to be digitally transferred, entered, stored and analyzed. This type of application or platform provides significant benefits to both providers and patients, and potentially insurance companies. According to one primary care physician (PCP) at UCLA, primary care physicians spend approximately 15-20 minutes for every new patient or annual visit going through and filling out medical history forms. PCPs see on average 4 to 6 patients a day, meaning that a PCP will spend approximately 1 to 2 hours in a given day on administrative tasks alone. From her personal experience, the patient health history questionnaire is filled out via paper and gets scanned in later. There is currently an application for the patients to fill out the PHQ-9 (depression screening) questionnaire, which is able to summarize the data for the physicians, however, this is not the case for health history questionnaires. Having a system that achieves this prior to the patient's appointment could save staff time and clinics can potentially see more patients, and eventually increase their revenue.

From the patient's perspective, any paperwork at the doctor's appointment that needs to be filled out each time he/she is here for an annual visit can be burdensome. He/she may not remember particular events in his/her medical history, he/she may feel rushed if they must fill out the form prior to their appointment in the waiting area and may not understand the terminology. If the patient only had to fill out the form once electronically and can be updated on a yearly basis, this could potentially save a substantial amount of time and effort for the patient.

Larger health systems, such as Kaiser Permanente and Mayo Clinic have a web-based portal where patients can schedule appointments and fill out necessary paperwork, however, the applications are only available to use for Kaiser or Mayo members and are deemed

unaffordable to smaller, independent clinics, thus, smaller clinics are the ones that are buried in paperwork.

3. Product/Technology

A secure application is being developed that will allow the patient to access these forms through a web link and a log in via a mobile application. The specific workflow is displayed in Figure 1 and sample screenshots of the pre-appointment screens are found in Figure 2. Initially, this app will specifically target primary care clinics but can be expanded to other smaller clinics, such as optometry, dentistry and chiropractic clinics.

When the patient calls to schedule for an appointment, the clinic staff will schedule an appointment and verify name, phone number, e-mail and insurance information. The appointment will then be imported into this application, which will then trigger the creation of a user profile for new patients. An email will be sent to the patient reminding him/her of the appointment and with a link to the electronic health history questionnaire and other forms to sign. Every patient will be required to fill out this electronic document once and each time he/she is here for his/her annual check-up, the patient will be asked to review and update their previous responses. The patient will also be asked to fill in their emergency contact and sign the HIPPA compliance form. This information is then sent over to the provider and updated in the health system's EMR.

While with the current app, the providers will be able to view the patient's' responses to the health questionnaire and any medical conditions, allergies, etc, from the app, in the future, we also hope to integrate additional features, such as a concise summary that is generated which lists any illnesses, surgeries, allergies that is in an easy to read format for the provider.

These concise summaries allow the provider to be alert on the patient's main medical concerns instead of having to scroll through the questionnaire. Next, the patient will be prompted to a page to pay for the estimated charges for the appointment. The patient has the option of linking their account with their PayPal account or credit card and will be able to pre-pay for that appointment. Three days before the appointment, the patient will receive a reminder e-mail about the upcoming appointment. On the day of the appointment, the patient will check in through an iPad by entering their first and last name and phone number. For new patients, the patient's picture will be taken at this time so that providers are able to confirm the patients through his/her digital image. Once the patient checks in, the provider is notified immediately. After the appointment, the patient is notified of any additional charges and will be able to access the appointment summary notes, etc. through the mobile application.

Figure 1. OnBoardID Mobile Application Workflow

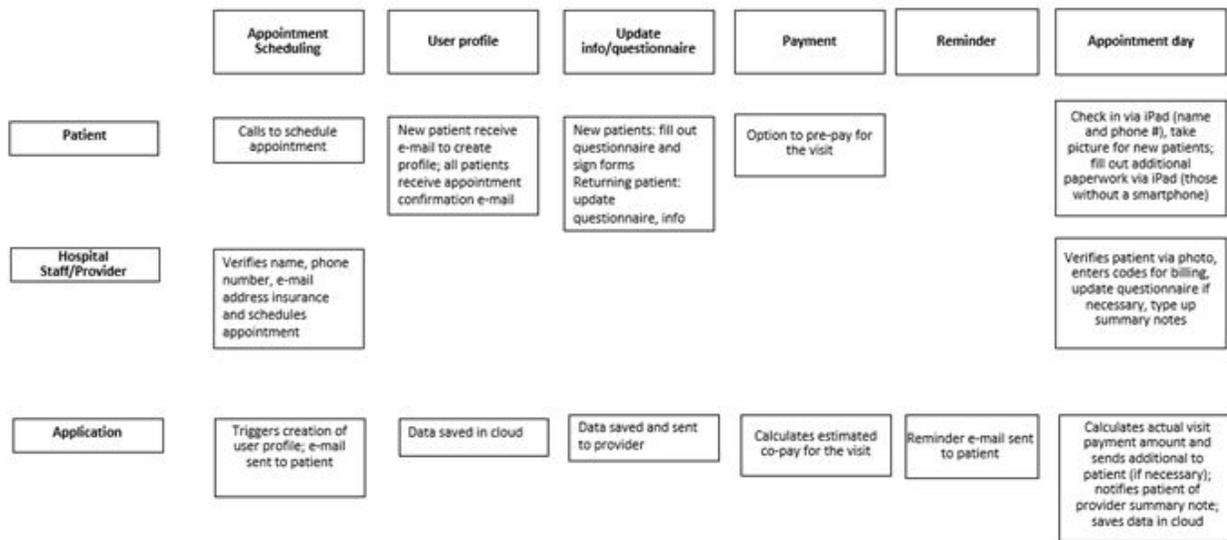
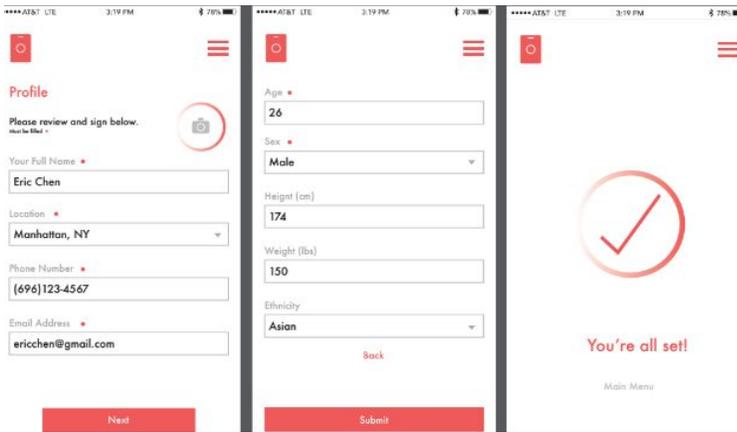
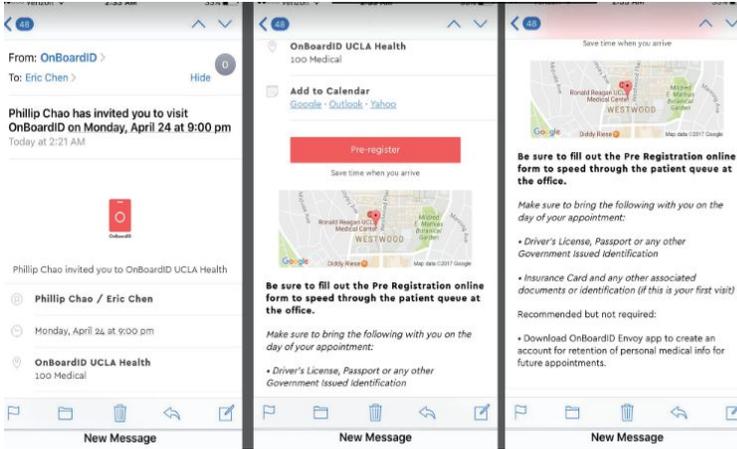


Figure 2. Prototype - sample screenshots of pre-appointment screens



iPad 6:58 PM 56%



OnBoardID

Tap to sign in >

Sign out

Been here before?



6. Complaints. You may complain to us or to the Secretary of Health and Human Services if you believe your privacy rights have been violated. You may file a complaint with us by notifying our Privacy Officer. All complaints must be in writing. We will not retaliate against you for filing a complaint.

7. Contact Information. If you have any questions about this Notice, or if you want to object to or complain about any use or disclosure or exercise any right as explained above, please contact:

Privacy Officer: Phillip Chao

Phone: 346-800-7445

Address: 100 UCLA Medical Plaza Driveway, Los Angeles, CA 90024

E-mail: phillipchao@ucla.edu

8. Effective Date. This Notice is effective April 24, 2017

Acknowledged and agreed on **May 1, 2017**:

SIGNATURE

Phillip Zhang 7188

NAME

May 1, 2017

DATE

A copy of the signed agreement will be sent to: phillip@ucla.design



No
ARE YOU SEXUALLY ACTIVE?

Dentist
LIST OTHER MEDICAL PROVIDERS YOU SEE ON A REGULAR BASIS (I.E. CARDIOLOGIST, MENTAL HEALTH PROVIDER, KIDNEY DOCTOR, DENTIST, E...)

Fever
REASON FOR VISIT

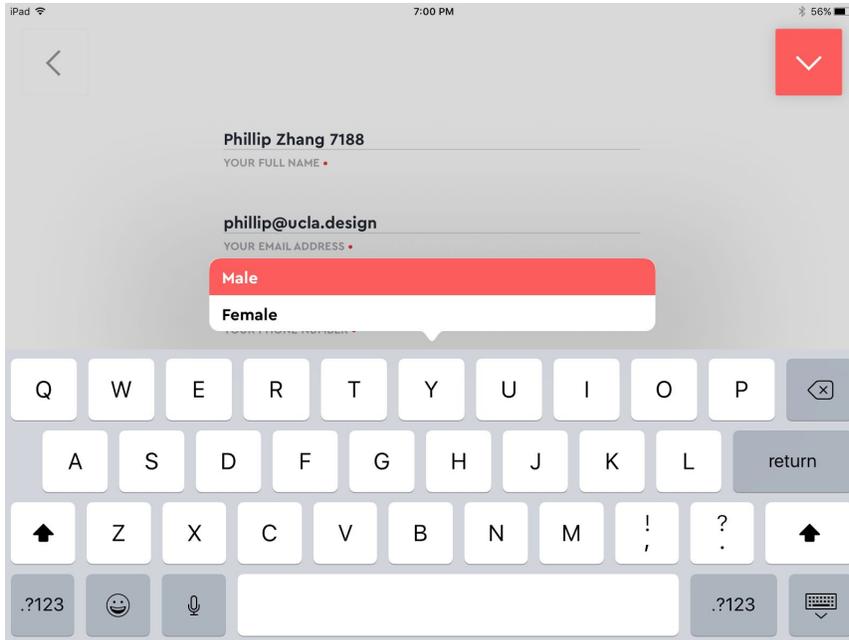
8282892378490328
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02/21
EXPIRATION (MM/YY)

828
CVV (USUALLY 3 NUMBERS ON THE BACK OF CREDIT CARD)

NOTES (OFFICIAL USE ONLY)





Value Proposition

Large health systems such as UCLA or Kaiser Permanente have an electronic medical record system and web-based tools for their patients; however, smaller practices cannot afford such a system. According to a *Health Affairs* article, the cost of implementing an electronic health record system in an average 5-physician practice is \$162,000 and an additional \$85,000 in maintenance in the first year, which includes 134 hours per physician or support staff of entering information from paper records [2]. Many smaller clinics, thus, are left without an EMR system and even their intake process is paper-based.

Value Proposition Statement: We offer an affordable, easy-to-use patient-onboarding/intake software that could eliminate excessive intake paperwork, improve efficiency and save costs in the long run.

We will demonstrate technical feasibility by beta testing at a variety of clinics of different size. When a customer purchases our product, there will be a checklist of items that must be met before it can be implemented and an implementation consultant will visit the clinics to ensure software compatibility. Since this is a subscription based web application, there is no need for it to be manufactured.

4. Intellectual Property

Since we are developing a software, we are not able to patent it, however, we plan to trademark our OnBoardID logo and copyright our software with the US Copyright Office as soon as the software is published. Registering for a copyright costs only \$45 and is extremely important since it would protect our software from infringers.

5. Market

The target customer is a small independently owned clinic, such as a primary care, pediatrics, optometry or dental clinics. It is estimated to be 14,000-16,000 independently owned optometry practices and is expected to grow 2.2% annually [3]. In 2005, there were approximately 287,000 primary care physicians and of those, 32% practiced in solo practices, so we estimate that there are 92,000 independent practices and according to this article, with population growth and aging, there is a need for 29% increase in primary care physicians from 2005 to 2025 but it is only projected to increase by 7% [4]. This is likely to lead to increased wait times for clinic appointments. In 2012, there were approximately 133,000 dental firms in the US and of those 55,350 were for firms with less than 10 employees [5]. A similar shortage in

dentists are being speculated. While we have limited information on whether these independent clinics have an intricate EMR system, we suspect that they would not since the return-on-investment is low.

The only competitors with similar features as OnBoardID are Kaiser Permanente and Mayo Clinic. Both are large health systems with millions of patients and have robust EMR systems in place. Because of their volume and size, they are able to offer an intricate app to their patients. Both mobile applications allows members to log in and view lab, pharmacy, office summary, make appointments, communicate with providers and fill out necessary forms. These features are only available to members of these health systems. Although our product is not as advanced and intricate as Kaiser's or Mayo's applications, we do not require clinics to have an EMR system in place, but still offer features to streamline the workflow through technology. Our product is also subscription based and allows potential customers to "try out" our product before committing to a subscription. Rather than purchasing an expensive EMR system that could provide additional access through a mobile app, this is a much more affordable solution for smaller clinics interested in cutting down time for both the provider and patient to fill out paperwork. On the other hand, this product does not replace a EMR system and has limited capability for storing a patient's medical record. Unless previously scanned in, only new paperwork, such as the health questionnaire, patient visit summaries are accessible through the app.

Due to the sheer number of private clinics, we do not feel that we would encounter significant hurdles to entry into this market. Clinics that are old fashioned and providers who are not tech savvy or cater to an older generation may be opposed to this technology. Further, because of historical data breach incidents, many providers may be opposed to adopting a new technology that stores patient information onto a server.

6. Sales and Distribution

Customers will be compelled to use this product since it's affordable, streamlines the entire intake process for the patient and the provider, which saves time and it's low risk, since it's a subscription-based model, customers do not have to worry about committing to an entirely new system. We will reach out to private offices, through fliers and personal outreach, especially primary care, pediatrics, dental and optometry clinics directly and offer them a 30-day free trial. We will also take advantage of Google Ads and offer new users a 30 day free trial with automatic enrollment into the monthly subscription if not cancelled within the trial period. We will generate profit by capturing a large market share, not restricted to primary care clinics. If other types of clinics, such as optometry, podiatry, chiropractic offices adopt this technology, we are capturing a much larger market share. Additionally, while the standard monthly subscription is for a primary care clinic of up to 5 providers, the application can be customized to the specific needs of the customer, such as a separate intake form for specialty clinics and other features that would increase the monthly subscription rate.

7. Regulatory Strategy

Since there is no harm to the patient besides the possibility of a data breach, we do not need to be cleared for safety and efficacy. As for the data that we handle on our servers, we will have to become HIPAA compliant before OnBoardID is released for beta testing and mass use.

8. Clinical Studies

No formal clinical studies will be conducted; however, we will keep track of any customer complaints, feedback, bugs and technical issues that customers have encountered. These data will help improve our product and cater to our customer's needs. Additionally, financial data will be collected from several clinics in order to compare baseline profits compared to profits at one, two and five years after adopting this technology. We expect their costs to decrease and net profits to increase. We also expect happier and less confused patients because doctors are able to see more patients but also patients can be seen for a longer, much needed time, without being rushed out the door. This creates a positive feedback loop that can solve the problems of doctors feeling like they're behind on appointment schedules, and patients getting much closer appointment times from the day the appointment is created.

There will be a controlled segment of six months that we'll be using to beta test OnBoardID with close by clinics that are dealing with a wide variety of fields from primary care to dental to optometry to chiropractic.

9. Reimbursement

We do not anticipate any reimbursement from insurance companies, however, we are investigating an option to have insurance companies incentivize providers to adopt this technology. If we are able to prove to insurance companies that this product is creating savings, then they may be able to reimburse providers, for example, preventive care visits, who use this technology at a higher rate.

10. Financial Information

The company has a need to raise rounds of funding for server costs, data protection software, and for marketing reasons to reach more independent clinics in the US. Onboarding of clinics/doctors to our product will require significant funding due to the need for a sizable technical support or customer service team to answer questions and troubleshoot problems on Monday through Friday, normal business hours when the software would be in use. Expansion and an utmost able team of engineers to work on maintaining uptime for our servers, while building for scale when our client base increases.

The generation of return for investors would take place when we have acquired a sizable number of clients, who collectively, are able to accumulate a bigger monthly cost to our burn rate for operations. This would be estimated at the 18 month mark, which is when we would have a more stable product that doesn't frequently require feedback changes to fit the use of clinics better, and we can focus more on helping clinics have the best experience on OnBoardID.

11. Technical/Market/Financial Risks

The key outstanding risks that we are running into as a medical software service are having to handle patient data and making sure all information is transmitted securely—even one vulnerability in our code could cause the leak of patient medical records into the wrong hands. We can mitigate this risk by thoroughly investigating the mistakes that other startups have made in the past with regards to data breach. Another risk is that customers who are not tech savvy or clinics serving older patients may not be willing to adopt this technology. We will target younger providers and provide training and support for staff so that any technological challenges can be mitigated. Patients without a smartphone or computer have the option of filling out the forms via iPad at the clinic.

Another risk that we are seeing is one pertaining to which specific target market we want to have as our first beta clients. We have been pretty set on testing with small, independent Primary Care Physician offices because we see that they mostly don't have the engineering power nor the money to hire a contractor to build our platform just specifically for them. So by providing this month to month service for them, we will have sample data to show how much money the PCP offices are saving each day, each week, and each month by simply extrapolating the number of patients seen prior to using OnBoardID and then using OnBoardID, as well as narrowing the analysis down to how long an average patient would be in the waiting room. The risk here that remains to be addressed is if we could scale this business model all the way through to PCPs under Kaiser Permanente that have more advanced EMRs, or just EMRs at all, and also determine if we can still provide a value proposition that indicates they should use our service over theirs.

12. Management Team

The founders are Phillip Chao, Vanessa Lee and Ayae Yamamoto. Phillip Chao is a student at UCLA, computer programmer and has expertise in technology and design, Vanessa Lee is a student at the Art Center College of Design and has expertise in product design and editing, and Ayae Yamamoto is a graduate student at UCLA and has expertise in healthcare research, data analytics and project management.

13. Conclusion

While big competitors such as Kaiser and Mayo can afford an extensive EMR system that is linked to a patient web portal and allow patients to complete paperwork electronically, there is a need for an affordable software that caters towards smaller clinics, such as primary

care, pediatric, optometry and dental clinics. OnBoardID streamlines the entire patient intake process leading to less paperwork, greater accuracy, less time wasted and eventually cost savings for the customer.

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