Friday, May 27, 2016

Business / Sustainability Plan

Current Landscape - Issues

Clinical data

Consumers are not able to access all their health data from a single source. Their medical records are locked up in vendor specific EHRs (using proprietary data formats). A major portion of health providers don't provide a patient portal. Even in the case where patients have access to patient portals from their providers, if a patient sees providers across health systems, they are not able to view their data as a single longitudinal record - this is in spite of those health systems being serviced by the same EHR vendor.

Non clinical

Further, additional data from health devices, wearables, fitness apps etc are all in disparate systems and never make into their EHR for providers to look at them. Hence a major portion of health information which could health gain better insights and potential change outcomes is lost.

Implications

When a consumer wants to get a second opinion for a chronic condition from a specialist outside their health system, there is no easy way to get their health records to them. Further, due to clinical information being in silos locked in vendor specific EHRs, physicians cannot get a complete longitudinal history of the patient thus preventing them from making decisions that would lead to best possible outcomes to their patients. In addition, this is a cause of a very high rate of medical errors causing it to be the third leading cause of death.

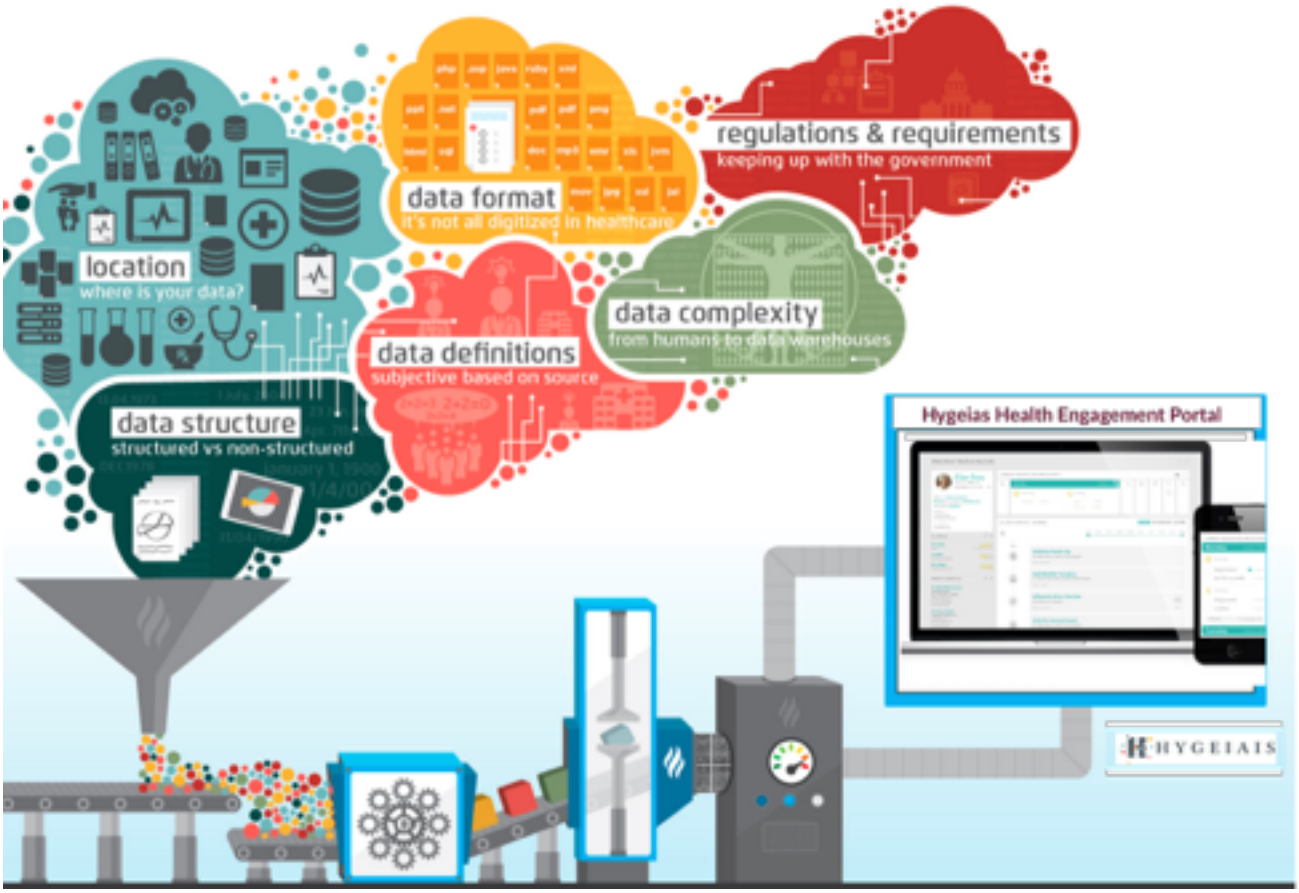
A significant part of a patient’s daily health data such as medication adherence, moods, symptoms, vital signs etc. is never completely understood by their Providers. For eg. Medication adherence alone is a $300B problem in the US. if all of this data could be available to the respective Providers, Clinical Trial Principal Investigators etc., it would significantly improve outcomes.

Hospitals and health systems spend hundreds of thousands of dollars to build custom integrations, transforming data from proprietary formats. Further, there is a lack of good clinical apps since app developers are not economically motivated to build them. Primarily, because they are not able to access data in a standard format and there is no way deploy the same app at another hospital or health system.

Solution

Hygeiais seeks to solve this challenge by building a connected health platform built on FHIR so that all clinical data and other patient generated health data (PGHD) into a single normalized format.

Hygeias uses late binding techniques to convert data from proprietary formats of EHRs and wearables, health devices etc. to FHIR format. This makes it flexible to add more datasources as we grow. Hygeias has an implementation of FHIR standard. More information on that is on our site. http://healthapi.hygeiais.com/fhir



The integration layer of connected health platform encapsulates all of the data aggregating, data mapping into a FHIR format. All the data is codified by using our terminology services with our FHIR implementation into various coding systems SNOMED, LOINC, ICD etc as well map them into corresponding value sets. This enables downstream applications to run analytics (population as well as cohort-based)

Health Engagement Portal

Once all the clinical and non-clinical data is aggregated into our system, consumers can access their data using our health engagement portal and make sense of their health information in a user friendly way. Consumers can view their health data by date (a user-friendly timeline), by condition (all of their data related to a particular condition - medications, procedures, lab reports etc.) and by type (eg. condition, medications, immunizations etc..). Having this flexibility, helps providers to communicate better with their patients / consumers and hence can better engage patients in managing their own health.

Patients (especially ones with chronic conditions) can easily get second opinions from leading experts who are not part of their health systems by seamlessly sharing their entire (longitudinal) health record with them, thus reducing the time to get a second opinion from several weeks / months to a few days or even hours.

Family members and care givers can access patient's health data (with the patients authorization) can manage the patient's health data, communicate with care team in a seamless way, thus breaking down barriers to understanding the patient's health.

Providers will have a 360-degree view of the patient since they can access patient's health data generated from different devices, health apps and thus better have insights into the patient's condition thus helping them make better decisions.

Finally, due to our architecture of late binding, it is easier to do what-if analysis in the visualization layer.

Clinical Apps built on Hygeias' Connected Health Platform

Hygeiais seeks to leverage SMART on FHIR platform onto our FHIR implementation to expose only the subset of the data that is required for each app using specific resources. App developers then don't need to know the entire data model (unlike proprietary HL7 messaging). They can collaborate with leading clinical researchers / experts to build disease specific tools that can potentially change patient outcomes (unlike most of the apps available on App stores that are not clinical vetted). This can potentially bring down the timeline of new research to community physicians' use to about 2 years - currently that takes about 11 years.

Further, app developers can build clinically proven apps by collaborating with clinical experts targeting consumers in changing their behavior and this better manage their health. SMART on FHIR platform enables these apps to scale since these apps once written can be deployed in any health system around the world where SMART on FHIR platform is deployed.

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Financial Estimates

Description	2016	2017	2018	2019
Net Sales	$103,500	$1,652,500	$4,040,000	$8,050,000
Cost of Sales	$208,000	$872,000	$1,436,000	$4,021,000
Gross Profit	**-$104,500**	**$780,500**	**$2,604,000**	**$4,029,000**
Operating Expenses				
Sales and Marketing	$18,000	$270,000	$360,000	$1,480,000
Product Development & Hosting	$96,000	$320,000	$360,000	$1,260,000
rProduct / Project Management	$36,000	$56,000	$96,000	$287,000
Customer support [includes Operations]	$22,000	$106,000	$340,000	$526,000
Office & miscellaneous costs	$36,000	$120,000	$280,000	$468,000
Cost of Sales	$208,000	$872,000	$1,436,000	$4,021,000

Users by products	2016	2017	2018	2019
Records sync subscription [Patients]	100	2,000	6,000	10,000
Premium services subscription [Patients]	50	150	400	1,000
Second opinions [Patients]	100	1,000	3,000	7,000
Hygeiais cloud for clinics / hospitals	2	50	100	200

Revenue by products	2016	2017	2018	2019
Records sync subscription [Patients]	$20,000	$400,000	$1,200,000	$2,000,000
Premium services subscription [Patients]	$17,500	$52,500	$140,000	$350,000
Second opinions [Patients]	$30,000	$300,000	$900,000	$2,100,000
Hygeiais cloud for clinics / hospitals	$36,000	$900,000	$1,800,000	$3,600,000
Net Sales	$103,500	$1,652,500	$4,040,000	$8,050,000

Key Assumptions	Annually
Records sync subscription [Patients]	$200
Premium services subscription [Patients]	$350
Second opinions [Patients]	$300
Hygeiais cloud for clinics / hospitals (avg)	$18,000

Engagement Plan

Business Model Canvas

Team: HYGEIAIS - Connected Health Platform

Date: 5/02/16

The Business Model Canvas

Key Partners
1. Clinicians: UCSF, MD Anderson, MSKCC, Stanford, Cleveland clinic etc.
2. Hospitals For piloting the data/app platform.
3. EMR data aggregator
4. Wearables / Apps companies
5. Clinical App developers
6. Wellness companies
7. Government + NGOs Identify pilot opportunities

Key Activities
1. Build the health data aggregator platform
2. Evangelize / Market to grow user base
3. Build App marketplace
4. Onboard app developers
5. Training
6. Compliance

Key Resources
1. Engineering / IT
2. Cloud Infrastructure
3. Back office staff
4. Marketing
5. Business Development
6. Regulatory consultants

Value Proposition
1. *For patients:* Get all their health records in one place within 30 mins (vs. 6-8 weeks if they see providers across different health systems). Get second opinions in 2-3 days vs. waiting for 60 days also at 15% of total cost.
2. *For providers:* Make better decisions since they can get a complete health record of the patient in one place. Increased referrals for second opinions (hence revenue), visibility as well credibility. Access to clinical apps built by leading clinicians in their field.
3. *For Payors:* Analytics for population health
4. *For App developers:* Access to clinical data in a single normalized format so that they build scalable clinical apps

Customer Relationships
1. *Consumers* manage their health records for free.
2. Providers get referrals for second opinions
3. *Health systems* access to latest clinical apps built by leading clinicians
4. *App Developers* get platform support to build FHIR based Apps.

Channels
1. Website (portal) / Mobile apps
2. Online health communities
3. Reach Experts theough peer network
4. Get community Physicians to refer chronic patients to experts for second opinions
5. App Developers will be reached through FHIR Connectathons, Hackathons & HealthTech conferences.

Customer Segments
1. Consumers / patients who want to manage their health and and share data with experts.
2. Providers who want referrals for second opinions
3. Health systems who want an app platform to deploy clinical apps.
4. App Developers who need data in a normalized format and a platform to host their clinical apps
5. Clinical researchers who want to bring their digital health ideas to market faster.

Cost Structure
1. Engineering - to build out the platform ~$30K (currently an MVP)
2. Pilot with health systems (shared cost) ~$100K
3. Build App Market Place - $45K
4. Marketing + Biz Dev + Operational costs
5. Cloud infrastructure (~$600/month)
6. Regulatory / Legal fees

Revenue Streams
1. Consumers (Freemium) : Concierge fee for managing their records
2. Providers: Revenue share from second opinions
3. App Developers: Revenue share from apps deployed on the platform
4. Health systems: Subscription fee for app platform.

MARKETING STRATEGY

IP Acquisition

Patent application. Efforts targeting licensing the platform to leading specialty practices

Marketing Programs

- Patients

Blogs, PR, Social media, SEM, Referrals

- Clinics

Visits, Advertising, Demos

Education

Comprehensive content organized by classification all in one place for resident and fellows of each specialty.

Partnerships

Health Plans
Clinics and hospitals for revenue share
Corporate wellness plans
App developers for revenue share

Events

Trade shows, Health 2.0 , digital health conferences, ASCO etc.

Bundles

Include curated premium content as add on for patient engagement. Also, bundle records, sync when user signs up for