August/September 2019 Report

Updated Information on 23 and Me

- DNA testing and genetic testing in general is an inexact sicene that is prone to errors, therefore, the results from the test are not always accurate
- The ancestry component of the 23 and Me test is based on self-reported surveys → leads to inaccuracy
- Europeans are much more represented in DNA databases
- Nearly all genetic testing companies reserve the right to change their privacy policies at any time
- Companies like 23andMe and Ancestry have signed on to a list of best practices (a policy framework created by the Future of Privayc Forum which includes both consumer and industry privacy groups)
    o While this is comforting, these practices are not legally mandated
- Some law enforcements use DNA test results gathered by these companies to help investigate crimes
- When GEDMatch changed it settings so that users have to opt in to law enforcement searches, they available database shrunk from over a million to just 180,000 profiles
- Companies with fewer than 15 people, life insurance, disability insurance, and long-term care insurance companies can request genetic testing as part of their application process

Ferticility start-up Celmatix sues former business partner 23andMe
- *Dec 10, 2019*
https://www.cnbc.com/2019/12/10/celmatix-sues-23andme-for-100-million.html

- 23andMe is getting sued for over $100 million in damages by Celmatix
- Celmatix alleges that 23andMe breached a research contract that it entered into in November 2015 and caused the, significant financial setbacks
- The 2 companies forged plans to create a "general fertility prognosis product" aimed at helping women proactively plan the optimal time to start a family
    o The deal also included an exclusive agreement where 23andMe would not be able to work with rival companies in the fertility and infertility space for a decade
- However, in 2018, 23andMe asked Celmatix to terminate the deal and its exclusivity
- Celmatix also alleges that 23andMe made steps to thwart Celmatix' financing round, causing the company great financial loss

https://www.darkdaily.com/23andme-invites-customers-to-add-health-and-drug-data-to-stored-genetic-test-results-encroaching-on-markets-where-both-apple-and-clinical-laboratories-generate-revenue/

December 27, 2019
- 23andMe is beta testing a method for combining customers' private health data (clinical laboratory test results and prescription drug usage) with their genetic data to create the largest database of its kind
    o This would place 23andMe in a unique market position that even Apple Health cannot yet claim → apple does not have genetic data

- o This may also make medical laboratories consider 23andMe's move a competitive threat to their own efforts to capitalize on combining lab results with patients' medical histories, drug profiles, and demographic data
- 23andMe plans to use 3rd party medical network Human API to collect and manage the data
  - o https://www.humanapi.co
- Involvement in this beta test is voluntary
- 23andMe is hoping that after people receive their genetic test results, they will then elect to add their clinical laboratory results, medical histories, and prescription drug information to their accounts as well
  - o They market that this will provide customers with easy, integrated access to health data that is typically scattered across multiple systems, and to assist with medical search
  - o This extra information could also help 23andMe provide customers with information about their risks for complex, chronic ailments

HumanAPI (https://www.humanapi.co)
Company mission/goal
- Mission: to create health data liquidity valued by customers, controlled by consumers
  - o To create a new kind of consumer-centric health ecosystem that give companies a simple way to get consumers to share their health data, so better products and services can be built
- The company built manual integrations to thousands of fragmented health information systems in the U.S and created a

new way for people to exchange and use the health data they need
- Investors: Bluerun Ventures, Andreessen Horowitz, SciFi VC
- The platform allows consumers to find, connect, and manage their healthdata → by singing up for a Human API account
  o They can search their doctors and health systems and locate their patient portal accounts using their ProviderGraph technology and consolidate their health data sources
  o They can also add data from fitness devices and sync all of their health data
- From the platform consumers can:
  o Add new sources
  o Turn off the continuous sync for any given source
  o Manage who has access to their health data and what data they have access to
- There is a mobile app
- 264M users
- Over 20,000 data sources in network
  o Includes data from
    ▪ EHRS
    ▪ Health systems
    ▪ Hospitals and Doctors
    ▪ Health insurers
    ▪ Laboratories
    ▪ Pharmacies
    ▪ Health apps
    ▪ Medical devices
    ▪ Wearable devices
    ▪ Wellness/fitness apps

- Their unified API allows for a comprehensive, holistic view
- Consumers can add information such as:
    o Immunizations
    o Medical conditions
    o Medications
    o Demographic data
    o Medical procedures performed
    o Care plans
    o Lab results
    o Social histories
    o Allergies
    o Vital sign measurements
    o Doctor instructions
    o Provider information
- The platform helps consumers digest the data in a way that makes sense to them
- Key features:

Features

Reporting and analytics dashboard

Role-based HIPAA-compliant access controls

Quickstart campaign launcher

API access token and notification management

Population-level user management

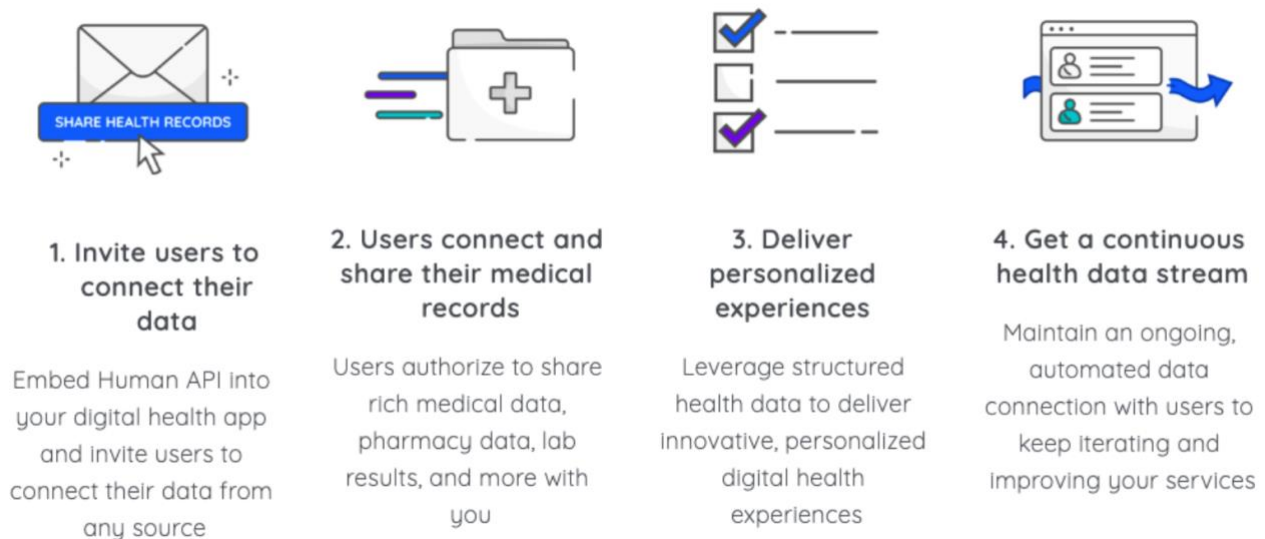Connect end-user interface configurator

Fictionalized user profiles with sample health data

Reference applications with sample code

- The API gives developers the ability to quickly use all the connected data programmatically
- Developers can integrate HUmanAPI's API into their app and allow users to share their health data with them

1. Invite users to connect their data

Embed Human API into your digital health app and invite users to connect their data from any source

2. Users connect and share their medical records

Users authorize to share rich medical data, pharmacy data, lab results, and more with you

3. Deliver personalized experiences

Leverage structured health data to deliver innovative, personalized digital health experiences

4. Get a continuous health data stream

Maintain an ongoing, automated data connection with users to keep iterating and improving your services

- Guardian (https://www.guardian-ida-pharmacies.ca) uses Human API to accelterate insurance underwriting
  o By engaging with customers to electronically share their health data, Guardian is able to streamline underwriting, improve customer satisfaction, and differentiate themselves in the insurance space

Clinical Research
- Human API can also help companies streamline clinical trial recruitment and create digital patient registries
  o Can build digital patient registries power by real-world clinical and claims data

- This could be one solution for sponsors, CROs, and clinical trial recruitment as it centralizes patient data and allows for a real-time medical data pipeline
- The Health eHeart Study at UCSF is powered by Human API
    o UCSF embedded Human API into their Health eHeart study, enabling more than 200,000 patients from around the country to share their health records and device data

Human API + Clinical Trial Recruitment

Integrate Human API into your patient enrollment funnel

Recruit patients to share data	Connect their medical records	Optimize the enrollment funnel	Build a connected patient registry
Embed Human API into your clinical trial recruitment workflow and digital enrollment forms	Patients connect rich medical records, pharmacy data, and lab results to see if they qualify for a current or future study	Automate inclusion/exclusion criteria and send better qualified patients to sites for randomization	Build a digital registry of patients with connected real-world data for future clinical trials and studies

Health Plans

Real-time health data to modernize your member engagement and risk adjustment programs

Engage members to connect their data

Embed our API into your member portals and member enrollment process

Retrieve real-time EHR data

Members share their electronic medical records, lab results and other clinical data from providers

Monitor risk and quality measures

Identify conditions and complications found in the rich EHR clinical records and notes

Ongoing member engagement

Maintain an ongoing data sharing relationship with members to offer new value-added services

Security
- The company declares that they only share personal health data with companies that consumers trust → will never send identifiable health data to a third party without consent
- Consumers can connect and disconnect any data sources, authorize or revoke access to any company, save or delete their health data
- Their secure cloud is HIPAA-compliant
- Personal data is encrypted both in transit and at rest
- Employees undergo comprehensive background checks
- Internal processes are regularly monitored and audited
- The platform has completed an independent SOC 2 Type 2 audit → indicates that system is designed to keep data secure