Big Data Hackathon

Resources

- Hackathon Details
- Mobile App Builds: GlideApps
- Website Builds: Bubble, Webflow, Carrd.co
- Pitch Deck Details
- AI startup expediting health diagnosis
- Crunchbase Filter for AI/ML/Health Diagnostics/Big Data
- Nabla – Health Tech Stack for Patients

Things to Remember

- **Simplicity is key**: we don't want a Swiss army knife of features.
- We should list out a few datasets to utilize before deciding on a problem we want to address
    - i.e., using **reimbursement data** and **IMR determination trends** to address problems in costs and lack of speed in diagnosing patients that can be solved by automating diagnostics, **prescription drug WAC and drugs introduced to the market increases** to show the demand and growth trend in automating drug discovery for patient diagnosis
- Once a problem is addressed, we can start thinking of a product based on what's in the market right now (examples in the group chat)
    - We can "cheat" a little by taking products already made and adding our own twist to it which would be great for a quick competitor benefits/dashboard for our presentation

Process

Identifying the **problem**

- We want to find variables that are applicable to this problem to establish a predictive model
- Using a user story as an example to support the problem statement – **early adopters**
- **Telehealth solution –** using data focused on skin diseases, diagnostic error statistics, underserved populations (mostly Latino) have a higher rate of AMA discharges due to slow diagnostics
- What are the causes of delayed diagnoses?

Coming up with a **product**

- **An all-in-one solution for patients and healthcare professionals to connect patient symptoms with diagnoses simpler and faster**.
- Support our product with growth trends/statistics in the market (the **"why now?"** question)
- Augmented patient experience?
- automated patient transcriptions?

Identify the **users/customers** and the **user journey**

- How we plan on selling the product - finding the total addressable market which we can pool from other startups
- **Ideal Customer Profile**: Understaffed hospitals and lack of health services in colleges provides slow patient-centric experiences. College students have a hard time accessing ways to address their

health problems and need fast and convenient solutions to address them. Due to this lack of access, students are becoming sicker in academic settings resulting in an increase in diseases spreading.

- **User Journey**:
  - SD resident has sore throat ➡️
  - decides to search "health clinic near me" ➡️
  - calls the clinic ➡️
  - clinic directs the person to Cenos AI API integrated into clinic's website/mobile app ➡️
  - patient fills in questionnaire with questions that branches using AI/ML depending on what the patient's symptoms are ➡️
  - questionnaire is received from the physician/clinic end cutting the middleman out of the equation ➡️
  - data is collected into a dashboard which the clinic sees from their perspective that curates diseases that closely relates to the symptoms based on the hospital's past patient and disease/symptom database ➡️
  - clinic can make a more accurate diagnosis based on the data collected and the physicians own recommendations which saves time

Required Survey Questions:

- AUDIT – How often do you have a drink containing alcohol? (Alcohol Use Questions)
- DAST – Have you used drugs other than those required for medical reasons? (Drug Use Questions)
- PHQ-9 – Over the last 2 weeks, how often have you been bothered by any of the following problems? (Depression Scale)
- GAD-7 – Over the last 2 weeks, how often have you been bothered by any of the following problems? (Anxiety Scale)

Explaining how our **product works** and how it **benefits users** which includes:

- Product explanation
- Wireframing the design
- Demo video

Competitive analysis and **benefits dashboard**

GTM strategy and **business model**

Company Vision

- Integrate private hospital data to our API
- Partnering with providers to make close API based on their data and our ML

Problem Statement: Healthcare diagnose patients too slowly due to fragmented communication, understaffing, and extensive research time, leading to higher costs and low-quality patient experiences.

- Who experiences the problem the most (early adopters)?
  - Physicians in understaffed hospitals
- What is the pain point associated with the problem?

    - Increased costs
    - Lack of communication across hospital functions
- What prevents them from alleviating the problem?
    - Lack of manpower
    - Lack of communication

Added feature: recommendations for patients on top of diagnostics dashboard for physicians/nurses

- Problem: Communication chain is fragmented
    - Call nurse, wait 15 minutes, answer checklist of questions for 10 minutes, usually no clear answer or referral to other healthcare arm
    - Eliminate wait time and speaking time
- Look into medical/legal issues, need MD to vet

GTM Strategy

- Resources: Epic Systems, FollowMyHealth (owned by Sharp) - potential competitor
- Target market: Understaffed primary care arms of hospitals
- Product-channel fit: build product to fit channels where customers live
- Channel-model fit: monetization models enable or disable certain channels
- AARRR Funnel
    - Acquistion
    - Activation
    - Retention
    - Revenue
    - Referral

Hospital GTM

- Healthcare providers are focused on providing the best health outcomes for their patients
    - Only after seeing sufficient data to prove potential impact
- Hospital metrics
    - Clinical outcomes: how physicians improve health outcomes for their patients at a faster rate
    - Population health outcomes: how leadership better demonstrates better health outcomes at a population level within their organization
- Affordable Care Act: hospitals began to focus on “value-based care”
    - Healthcare providers (hospitals and physicians) paid based on patient health outcomes rathe than the amount of services they deliver
        - Rewarded for improving outcomes and fined if outcomes don’t live up to higher performing hospitals

- Impact: healthcare stakeholders live and die by the metrics they report to the US government
    - Key hospital metrics
        - Readmission and reinfection rates
        - Mortality rates
        - Bed occupancy
        - Average length of stay
        - ER wait times
        - Hospital incident (hospital-acquired infections, etc)
        - Physician metrics: revenue generated, patients seen per day, average patient costs per day
        - Operating margins
- Find the right person to speak to:
    - Don't go to CIO until you can prove your healthcare app will have big impact on key hospital metrics
    - Partner with a leader in a clinical setting to enact running pilot
        - Identify physicians or other leaders who have a stake in improving metric
- Focus on pilot w/o a sale
    - #1 mistake is attempting to sell before developing a good reputation
        - Need evidence-based outcomes
- Iterate quickly when in pilot
- Publish a study
    - Credibility is the currency of healthcare
    - Tangible product to show what happened during pilot and how you improved metrics
    - Before pilot, make sure to have agreement in place if results are in your favor
- Repeat steps above with other hospitals
- Final step – prepare CIO conversation
    - Package pilot results into data-driven story
    - Anticipate questions about cybersecurity and compliance

Business Model

- Create value by:
    - Cutting costs by saving time
        - Problem:
            - Manual patient intake process conducted by nurses and written documents (labor is one of the biggest cross drivers)
            - Repetitive diagnosis process from initial screening (via phone or online) to nurse to doctors during patient visit
        - Solution:
            - Automation streamlines patient intake and screening

        - Less labor costs
    - Improved clinical outcomes
        - Patient side: Mobile-first, automated screening questionnaire for better patient experience
        - Doctor side: Automated dashboard with pre-diagnostic insights for faster diagnosis
- Deliver value by:
    - Cloud-based SaaS delivered via API within hospital patient management software
        - Little to no implementation costs and short delivery time
- Capture value by:
    - Hospital revenue = 300M
    - Operating margins: 0%
    - Total costs: 300M
    - Urgent care revenue per visit = $150
    - 0% operating margins = $150 cost per visit
        - 150 * .41 = 61.5
            - 29
        - Scalable and flexible pricing (hospital size correlates to patient intake)
- Sell to hospitals and partner with their software providers
    - Follow My Health for Sharp Healthcare