The State of Adult Medical Care

Audience Q&A
Question 1

What is a non-communicable disease?

a) Terminal illness
   - 7%

b) A group of conditions that are not mainly caused by an acute infection
   - 60%

c) A group of conditions that cannot be caught early on
   - 13%

d) A group of conditions that cannot be controlled
   - 20%

Fact:
If left unchecked, these diseases result in long-term health consequences and often create a need for long-term treatment and care.
Non-communicable diseases make up 71% of all deaths globally

1. World Health Organization
Question 3

What is the leading cause of bankruptcy in the US?

a] Home Mortgages

b] Auto Loans

c] Unexpected Life Expenses

7%

D] Medical Expenses

93%

Fact:
66.5% of bankruptcies were due to medical expenses

*American Journal of Public Health (2019)*
Question 4

Which age group accounts for the majority of persons who decline health care coverage?

a] 55+  
13%  

b] 40-55  
27%  

c] 24-38  
40%  

c] 18-24  
20%  

Fact:
- ~30% of Millennials surveyed are presently uninsured.
- ~80 percent delay seeing a doctor.

GetInsured's 2020 Millennial Health Insurance Survey,
What is the average doctor office visit cost in the US?

a] $20–50 (155 HKD or 559 TWD)  
7%

b] $300–600 (2330 HKD or 8,388 TWD)  
53%

c] $800+ (6,214 HKD or 22,370 TWD)  
13%

d] $100–200 (777 HKD or 2,800 TWD)  
27%
Question 6

What are two downsides to the near universal health care system in Taiwan & Hong Kong?

- a] Expensive cost 33%
- b] Full capacity of large medical institutions 67%
- c] Incomprehensive population coverage 47%
- d] Short consultation times 13%
- e] Low coverage rates 7%

Fact:
- The United States is the only country of the 33 developed countries that doesn’t have universal health care
What is true about chronic diseases?

a] Over 40% of Americans suffer from at least 1

b] Less than 57% of chronic disease patients receive recommended preventative care

c] Comprises over 75% of all health care costs

d] They cause 7 out of 10 deaths per year

Fact:
- U.S. has highest rate of disease burden among comparable countries
- 6 in 10 adults in the US have a chronic disease
- 4 in 10 have 2+

Centers for Disease Control and Prevention
Jess

Trivia Champion
Health Hero

Adult Working Group
Health Facts
• Group with greatest numbers in the labor force
• Largest caregiver population
• Largely autonomous with the ability to manage their health if given the tools

18–34
Lowest earners
Highest uninsured rates
The age of preventions!

35–54
Chronic diseases rise sharply with age

55–64
Chronic disease symptoms can become more severe

2. United States Census Bureau (2020)
Barriers to Healthcare

Pandemic Situation
Access to healthcare has diminished largely due to the increased worry about community infection.

Culturally Competent Care
It's critical to have providers that are understanding of cultural considerations when providing care.

Time
In 2014, around 16% of adults avoided medical care due to time-related reasons.

Geography
Lack of services nearby and/or challenges with transportation.

Inadequate or Lack of Health Insurance
Deters people from seeking out routine care and screening as well as care for ailments.

Cost
Cost of doctor's office visits, prescription medication etc.
Use of technology can help provide adults with more access to healthcare
- 66% willing to use telemedicine
- 70% feels comfortable with it
- Middle-aged adults are most willing to use it for urgent care

References:
2. Telehealth Index Consumer Survey (2019)
Health Hero in Action

To Offer Non-emergency health care options
02
Health Hero
Main Function:

- Put power into the patient’s hand while supporting them.
- Submit details regarding non-emergency medical condition.
- Receive a consultation summary report with findings from 2-5 independent medical doctors.
Health Hero

Patient Portal

- Consultation Services
- Communication
- Continuous Tracking
- Preventive Monitoring
Features

1. Health Screening
   - Patient Profile

2. Intake Questionnaire
   - Videos
   - Images
   - Voice Recordings

3. Provider Matching
   - Urgency
   - Condition
   - Complications
   - Med history
   - Culturally competent

4. Health Report Delivery
   - Diagnosis
   - Suggested next steps
   - Condition information

5. Follow-Up and Reevaluation as needed
Features

Consultation Services

Communication

Continuous Tracking

Preventive Monitoring

AI training data

1. Health Screening
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Target Providers

Consultation Services
Communication
Continuous Tracking
Preventive Monitoring

- General and Family Practice
- Internal Medicine
- Dermatology
- Women’s and Men’s Health
- Mental Health
- Nutrition and Lifestyle
Features

Consultation Services

Communication

Continuous Tracking

Preventive Monitoring

Submission of Details

Community groups

Request additional consultant

Integrated Consultation Report

Medical diagnosis and treatments
  Text, call, pop up

Prescriptions filling
  based on 80% consensus

Language Selection
Features

**Consultation Services**

**Communication**

**Continuous Tracking**

**Preventive Monitoring**

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**Personal tracking**

Day to day condition updates, regular test results

**Device Integration**

- Blood Pressure
- Heart Rate
- Oxygen Levels
- Glucose Levels
- Smart Watches

**Check-in Pop Ups**

Frequency and severity of pain/discomfort

**Data Visualization**

Long term condition updates, trends, and personal goals
Features

Consultation Services
Communication
Continuous Tracking
Preventive Monitoring

Artificial Intelligence Tracking for:

Primary Preventive Monitoring
- “Intervention” health screening
- Suggestions for altering risky behaviors

Secondary Preventive Monitoring
- Health screening for initial development of disease or illness

Tertiary Preventive Monitoring
- Health screening for prevention of disease progression
Security Issue
Security Issue for AI Training

Hospital(s)

Medical Center(s)

[NO] Personal Medical Data
[YES] Parameters in AI Model

Solution: The Federated Learning
Introduction to the Federated Learning

Step 1
Initial Model
Central Server
Hospital
Medical Center

Step 2
Initial Model
Central Server
Model Parameter
Hospital
Medical Center

Step 3
Initial Model
Central Server
Model Parameter
Hospital
Medical Center
Trained Model based on the local data

Step 4
Initial Model
Central Server
Aggregation of the two trained models
Hospital
Medical Center
Trained Model based on the local data
Federated Learning for solving the Security Issue

Local Model Training
- Hospital(s) and/or Medical Center(s) train the model locally

Parameter only
- Central Server collects the results from all hospital(s) and/or Medical Center(s) without accessing the personal medical data

Hero for Security Issue
04

Business Model
Startup Costs

To kick start the project...

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>$60,000</td>
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<tr>
<td>Cloud for Data Storage</td>
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<tr>
<td>Security</td>
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</table>

Total: $100,000
Avenues of Income

35% Access to Large Datasets
25% Partnership with Local Clinics and Pharmacists
15% Percentage of Consultation Fee
25% Advertisement
68% of all physicians in 2019 felt burned out.

40% of female doctors stop practicing or start working part-time.

Work from remotely.

Work on their own time.

Impact broader population.
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<tr>
<th>Basic</th>
<th>Advanced</th>
<th>Premium</th>
<th>Family Plan</th>
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<tr>
<td>$0</td>
<td>$60 per review</td>
<td>$420 per year</td>
<td>$420 per year with 8 visits total 2 family members</td>
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- ➔ Medical record
- ➔ AI Tracking device
- ➔ Online consultation
- ➔ Online prescription
- ➔ Optional follow-up appointment

- ➔ Medical record
- ➔ AI Tracking device
- ➔ Online consultation
- ➔ Online prescription
- ➔ Optional follow-up appointment
- ➔ Immediate consultation
- ➔ AI disease prediction
- ➔ Preventative monitoring

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- ➔ Optional follow-up appointment
- ➔ Immediate consultation
- ➔ AI disease prediction
- ➔ Preventative monitoring

➔ Flat rate of $25/review to one doctor
- Average doctor’s get paid $100 per hour
- Average Doctor consultation is about 15 minutes has be given with 24 hrs of notification
## Competition

<table>
<thead>
<tr>
<th>Feature</th>
<th>Health Hero</th>
<th>Docosan</th>
<th>hioscar</th>
<th>eDoctor</th>
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Future Outlook
Heroic Expansion

Phase 2: Broader Fields
- AI improvement and diagnosis
- Interactive medication delivery

Phase 3: Integrate Health System
- Daily health processing integration
- Disease prediction and prevention for most common chronic diseases

Phase 4: Intellectual Property
- Research assistance to stakeholders (students, doctors, researchers)
- Creation of unique, innovative questionnaires to assess and predict medical conditions

Phase 5: Systemic and Regional Interaction
- Provide constant registered status of medical resources
- Patients and doctors utilize information to allocate these resources
Summary Analysis

**Strengths**
Portable Health care
Accessible to medical attention in 24-hour
Multiple medical opinions
Time and journey saving
Constantly monitoring health status
Disease prevention and prediction
Research and technical assistance

**Opportunities**
High demand and socialization
- High demand of medical service
- Revolution in diagnosis and treatment
- Cooperation with regional medical institutions

**Weaknesses**
Resource allocation
The structure of physician
The current accuracy of AI diagnosis

**Threats**
Competition and consensus
- Peer competition
- Traditional view of health care
Health Hero

An App to Save Your Day!
Questions?

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