Introduction to Problem

- Cost barrier
- Scheduling barrier
- Accessibility difficulties
Case Study & Statistics

Normal Airflow

Wide Airway
↓
Normal Oxygen
↓
Healthy Heart

Sleep Apnea

Narrowed Airway
↓
Low Oxygen
↓
Stressed Heart
Why don’t people see doctors?
Table 63 (page 2 of 3). Delay or nonreceipt of needed medical care, nonreceipt of needed prescription drugs, or nonreceipt of needed dental care during the past 12 months due to cost, by selected characteristics: United States, selected years 1997–2014

*Updated data when available, Excel, PDF, more data years, and standard errors: [http://www.cdc.gov/nchs/hus/content2015.htm#063.]*

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Delay or nonreceipt of needed medical care due to cost¹</th>
<th>Nonreceipt of needed prescription drugs due to cost²</th>
<th>Nonreceipt of needed dental care due to cost³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic origin and race and percent of poverty level⁵,⁷</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 100%</td>
<td>14.6</td>
<td>14.0</td>
<td>19.0</td>
</tr>
<tr>
<td>100%–199%</td>
<td>12.2</td>
<td>14.4</td>
<td>18.6</td>
</tr>
<tr>
<td>200%–399%</td>
<td>8.0</td>
<td>9.2</td>
<td>13.9</td>
</tr>
<tr>
<td>400% or more</td>
<td>5.1</td>
<td>4.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Not Hispanic or Latino:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White only:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Below 100%</td>
<td>24.3</td>
<td>25.3</td>
<td>26.1</td>
</tr>
<tr>
<td>100%–199%</td>
<td>20.9</td>
<td>23.0</td>
<td>27.6</td>
</tr>
<tr>
<td>200%–399%</td>
<td>11.4</td>
<td>13.3</td>
<td>16.0</td>
</tr>
<tr>
<td>400% or more</td>
<td>4.6</td>
<td>5.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Black or African American only:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 100%</td>
<td>16.1</td>
<td>19.3</td>
<td>24.4</td>
</tr>
<tr>
<td>100%–199%</td>
<td>14.3</td>
<td>16.2</td>
<td>22.9</td>
</tr>
<tr>
<td>200%–399%</td>
<td>8.8</td>
<td>9.6</td>
<td>14.6</td>
</tr>
<tr>
<td>400% or more</td>
<td>4.6</td>
<td>4.6</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Health insurance status at the time of interview⁸

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Insured</td>
<td>6.8</td>
<td>6.9</td>
<td>9.1</td>
<td>7.5</td>
<td>3.7</td>
<td>5.9</td>
<td>7.3</td>
<td>5.7</td>
<td>7.2</td>
<td>8.7</td>
<td>11.8</td>
<td>9.6</td>
</tr>
<tr>
<td>Private</td>
<td>6.0</td>
<td>6.2</td>
<td>8.2</td>
<td>6.4</td>
<td>2.9</td>
<td>4.8</td>
<td>6.0</td>
<td>4.1</td>
<td>6.2</td>
<td>7.3</td>
<td>9.2</td>
<td>6.9</td>
</tr>
<tr>
<td>Medicaid</td>
<td>11.9</td>
<td>11.9</td>
<td>12.5</td>
<td>11.6</td>
<td>11.1</td>
<td>13.2</td>
<td>13.5</td>
<td>11.6</td>
<td>14.8</td>
<td>18.9</td>
<td>24.2</td>
<td>20.3</td>
</tr>
<tr>
<td>Uninsured</td>
<td>27.6</td>
<td>30.2</td>
<td>34.5</td>
<td>30.4</td>
<td>18.0</td>
<td>22.9</td>
<td>25.7</td>
<td>17.6</td>
<td>26.1</td>
<td>32.3</td>
<td>37.7</td>
<td>28.2</td>
</tr>
</tbody>
</table>
Table 63 (page 2 of 3). Delay or nonreceipt of needed medical care, nonreceipt of needed prescription drugs, or nonreceipt of needed dental care during the past 12 months due to cost, by selected characteristics: United States, selected years 1997–2014

Updated data when available, Excel, PDF, more data years, and standard errors: [http://www.cdc.gov/nchs/hus/contents2015.htm#063](http://www.cdc.gov/nchs/hus/contents2015.htm#063).

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Delay or nonreceipt of needed medical care due to cost&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Nonreceipt of needed prescription drugs due to cost&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Nonreceipt of needed dental care due to cost&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health insurance status at the time of interview&lt;sup&gt;8&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insured</td>
<td>6.8</td>
<td>6.9</td>
<td>9.1</td>
</tr>
<tr>
<td>Private</td>
<td>6.0</td>
<td>6.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Medicaid</td>
<td>11.9</td>
<td>11.9</td>
<td>12.5</td>
</tr>
<tr>
<td>Uninsured</td>
<td>27.6</td>
<td>30.2</td>
<td>34.5</td>
</tr>
</tbody>
</table>

Source: [https://www.cdc.gov/nchs/data/hus/hus15.pdf#063](https://www.cdc.gov/nchs/data/hus/hus15.pdf#063)
Figure 1. Percentage of people who had selected experiences with physician availability in the past 12 months, by age group: United States, 2012
Figure 2. Percentage of people who had trouble finding a general doctor in the past 12 months, by age group and health insurance status: United States, 2012
Figure 4. Percentage of people with health insurance who were told in the past 12 months that a doctor’s office or clinic did not accept their health care coverage, by age group and coverage type: United States, 2012

Source: https://www.cdc.gov/nchs/data/databriefs/db138.htm
EXISTING SOLUTIONS...
Dental Insurance
Choose coverage and pricing that will make you smile.
Find Plans

Short Term Health Insurance
In times of change, find short term solutions that help you bridge the gap.
Find Plans

Medicare
A federal health insurance program for people age 65 and older and/or are disabled. Enter your ZIP code to see Medicare plans in your area.
Find Plans

Medicaid
Health care coverage for those with lower incomes. Enter your ZIP code to see Medicaid plans available in your area.
Find Plans

Vision Insurance
See excellent value with vision insurance.
Find Plans

Know Where to Go for Care
Review the options for where to get care – and see how you can save money by choosing wisely.
Learn More
Enjoy the flexibility to visit almost any doctor that accepts Humana’s plan terms.

What’s the difference?

Learn more about the managed care options Humana offers for your Medicare Advantage coverage. The chart below may help you determine which option is right for you: a health maintenance organization (HMO), a preferred provider organization (PPO), or a private fee-for-service (PFFS) plan.

<table>
<thead>
<tr>
<th>Type of plan</th>
<th>Primary care physician (PCP)</th>
<th>Specialist Referrals</th>
<th>Copay for office visits</th>
<th>Our-of-pocket costs</th>
<th>Monthly premiums</th>
<th>Annual Deductible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Humana Gold Plus® HMO</strong></td>
<td>Member must choose an in-network primary care physician</td>
<td>Required from PCP</td>
<td>As low as $5</td>
<td>$2,200 - $6,700, depending on plan</td>
<td>As low as $0</td>
<td>No</td>
</tr>
<tr>
<td><strong>Humana Choice® PPO</strong></td>
<td>Open; in or out of network</td>
<td>Not needed</td>
<td>As low as $0</td>
<td>$3,400 - $6,700, depending on plan</td>
<td>As low as $0</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Humana Gold Choice® PFFS</strong></td>
<td>Open, but provider must accept Humana terms and rates</td>
<td>Not needed</td>
<td>As low as $10</td>
<td>$5,000 - $6,700, depending on plan</td>
<td>As low as $0</td>
<td>Yes</td>
</tr>
</tbody>
</table>
KAISER MOBILE
Worthy of critique

- Tools tailored to only customers who have bought these specific plans.
- Plans do not offer earliest available appointment option for patients.
- Patients are not able to compare benefits across various insurance coverages.
- Mobile technology potential not widely utilized in health care.
Main Constraint

- HIPAA (1996)
Over-Arching Importance

The HIPAA Privacy regulations require health care providers and organizations, as well as their business associates, develop and follow procedures that ensure the confidentiality and security of protected health information when it is transferred, received, handled, or shared...only the minimum health information necessary to conduct business is to be used or shared.¹
Knowledge is power
Rapidly Growing Insurance Space

- As of 2016, approximately 2 million agents, adjusters, and analysts must depend on antiquated systems founded on paper-based processes.²
- Personalized coverage models with real-time access to data.
- Between $2 billion and $3 billion invested in insurance startups with over 290 different investors competing for deals in 2015³
- Peer to Peer Insurance models.
Our Approach...
Initial Thoughts

- Too many papers exchanged in health care
- Care not easily accessible to many people
- Long wait times for receiving medical attention
- Lack of options
## Design Considerations

<table>
<thead>
<tr>
<th>DESIGN CONSTRAINTS AND OBJECTIVES</th>
<th>Priority ✓</th>
<th>Mobile App</th>
<th>Website</th>
<th>Call center</th>
<th>VR AI</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: Must be free for patients</td>
<td>✓</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>C: No patient data stored in cloud</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O: Easy to use</td>
<td>✓</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O: Shows available physicians &amp; co-pays</td>
<td>✓ ✓ ✓</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O: Shows future appointments and schedules</td>
<td>✓ ✓</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Initial Sketches
OptiLifeMD

Secure
- Compliant with HIPAA/Security Laws
- No patient info. stored in cloud
- Optimizes appointment scheduling
- Ability to search for specialized treatment
- Displays information about copays/payment

Patient empowerment
- User accessible
- Displays information about earliest available appointment

Provider-friendly
- Easy for doctors to send patient info
- Insurance marketing tool for features
- Easy to use interface
- Ability to change language
- No clutter
- Aesthetically pleasing to the user
- Easy to navigate and big font
Welcome to OptiLifeMD

find your PROVIDER

After uploading your insurance plan, let our algorithm connect you with providers in and outside of your network. We will provide you with information about the earliest available appointment and how much your appointment should cost.

Let us maximize your coverage.

FIND PROVIDERS

APPOINTMENTS

Get first-available appointments online and manage your appointments.
Cost Analysis & Revenue

● Cost:
  ○ Developing an app and CS team
    ➢ Varies from $20,000 to $50,000
  ○ Amount of money needed per person
  ○ Marketing, recruiting, company building, etc.

● Revenue:
  ○ Ads in the application, low cost to use the product, having free features and locked ones
Second Generation

- Other areas of disparities exist:
  - Language/Immigration status
- Additional cost-factors exist:
  - Comparing cost for medical services
  - Could increase competition and drive down cost
- Potential Features:
  - Holding medical information on the application
  - Referral Uploader
Ultimate Goal...
To become a disruptive technology and make healthcare accessible to all.
Thank you!

Special thanks to My T. Le, Andrea Goldsmith, & Erica Weirich