

CARIAN

Your Constant Companion For Your Surgical Journey





JOHN'S STORY

The Problem

Patients struggle with sticking to surgical instructions pre- and post- operation and so...



Patients spend more money and still face undesirable health outcomes



Errors result in more time and expenses for providers



Insurance companies spend an inordinate amount of money fixing problems from noncompliant patients



Non-adherence results in hospitals losing money too

Our Solution



A digital platform that unites patients,
providers, and caregivers

Patient's Mobile Portal:

John's pre and post operation experience with Carien



John Kleinman's daily medication list
for care giver
Nov.13th, 2020

Medicine

Ilevro, 1 drop



Besivance, 4 drops



Lotemax, 4 drops



● Instructions:

1. Insert drops in to operative eye
2. Wait 5 minutes between drops

Complete

Physical Care

Wear your eye shield at night or when napping



Dexter, John's care giver's receipt of John's daily medication adherence after his surgery

John recovers quickly using Carian

Doctor/Nurse's Tablet Portal: Direct tracking of each patient on a single page

Welcome, Dr. Friedman

Search..

- Patient 1**
Surgery: Surgery name 1
- Patient 2**
Surgery: surgery name 2
- Patient 3**
Surgery: Surgery name 3
- Patient 4**
Surgery: Surgery name 4
- Patient 5**
Surgery: Surgery name 5
- Patient 6**
Surgery: Surgery name 6
- Patient 7**
Surgery: Surgery name 7
- Patient 8**
Surgery: Surgery name 8
- Patient 9**
Surgery: Surgery name 9
- Patient 10**

Patient Profile

John Kleinman
Age: 65
Gender: Male
Weight: 89.2kg
Height: 1.75 meters
Past Medical History: Depression, COPD, Type 2 diabetes, Hypertension, Personality disorder.

Go to Form

Surgery Information

Eye Surgery for Cataract
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Morbi facilisis mauris vitae eros lobortis, eu semper magna ullamcorper. In a velit ac mi gravida tempus. Nam mauris ligula, viverra sit amet ante at, cursus hendrerit sapien. In id lectus molestie, bibendum magna a, lacinia turpis. Proin laoreet, purus non congue porta, urna mauris ultricies ex, at lacinia massa est a est. Aliquam at ex sed enim finibus mollis.

Form

Medical Adherence

- Amoxicillin
- Gabapentin
- Hydrochlorothiazide
- Ibuprofen
- Lisinopril
- Trazodone

Message

Doctor Friedman, I was having some irritation on the skin after using the medicine, is that a problem?

Reply.. 

Dashboard for the hospital (Concept)

- Dashboard reflecting readmission rate
- Data for average patients per doctor
- Monitor hospital capacity



Market Size

- U.S. Direct & Indirect Cost of Medication
Non-Adherence: \$300 Billion / Year
- Global Available Market for Medication
Non-Adherence: \$2.53 Billion
- US Available Market: \$452 Million
- East Coast Obtainable Market: \$78 Million



Marketing Plan

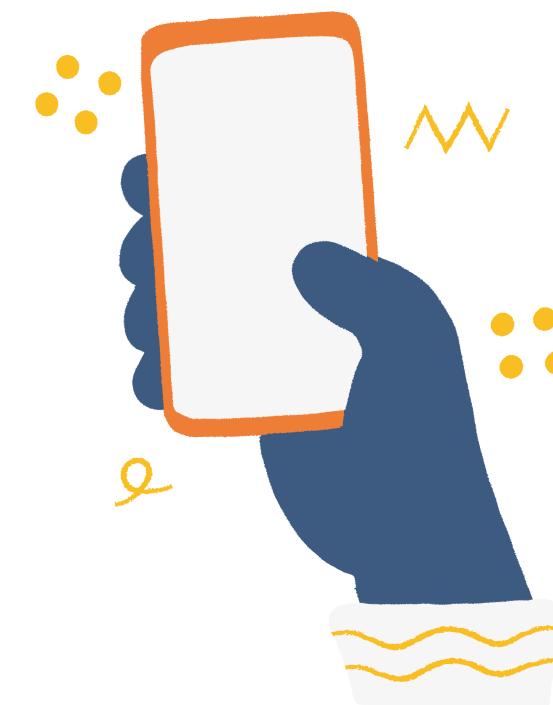
Who? Hospitals with High
Readmission Rates

Pricing?
\$10,000 First Time Set-Up
\$20 Per Surgery



Estimated Go To Market Plan

Now until Aug 2021



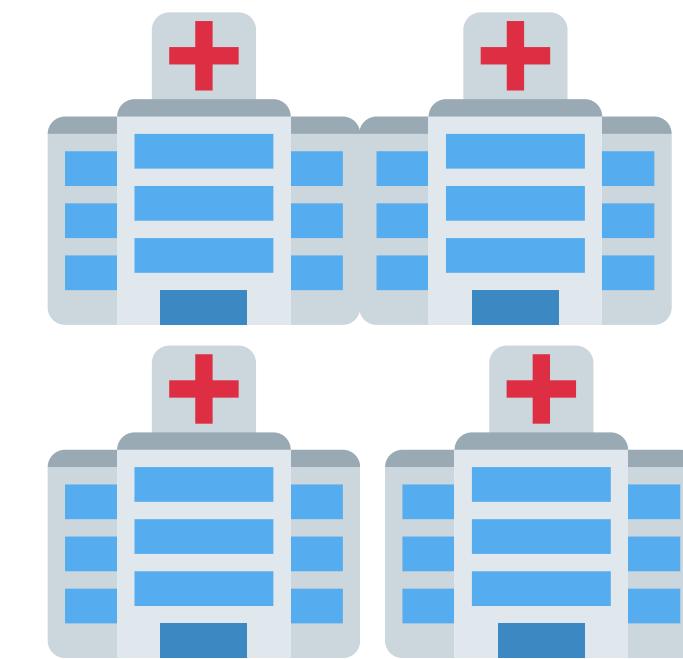
Product Development &
Bottom-Up Research

Aug 2021 - Oct 2022



Partner w/ Local
Hospitals

October 2022 - 2025



Hospitals in East Coast

Competitive Landscape

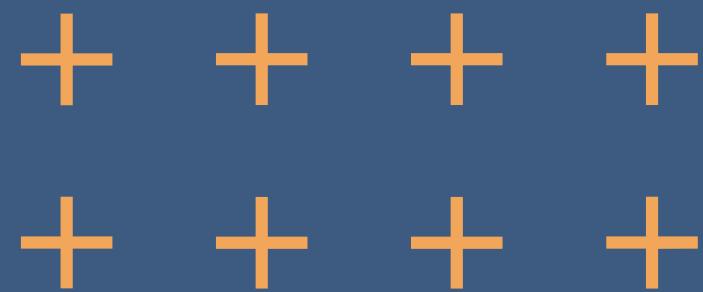
	Carian	Medisafe	BuddyHealthCare	AppCatalyst	Surgimate
Provider Patient Communication	+		+	+	+
Surgical Adherence	+	+	+		
Patient Education	+		+	+	
Team Cooperation	+			+	

Our Next Steps

We Are Here



The Team



Sophia Ghauri

B.A. in International and
Public Affairs '24

Experience: Healthcare, Policy
Research, Economic Research

Matthew Lee

B.S Computer Science -
Economics '24

Experience: UI Design, Product
Development

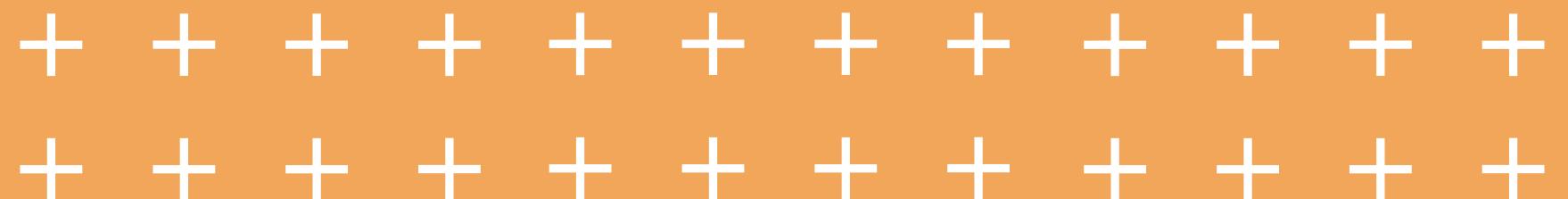


Yueshan Li

B.A. Computer Science &
International Relations '23

Experience: UI Design, E-Commerce,
Policy Research

Ready to build a
healthier world?



Citations

- <https://www.globenewswire.com/news-release/2020/07/30/2070091/0/en/Medication-Adherence-Global-Market-Report-2020-30-Covid-19-Growth-and-Change.html>
- <https://www.aha.org/statistics/fast-facts-us-hospitals>
- <https://www.beckershospitalreview.com/lists/230-hospital-benchmarks-2017.html>
- https://www.ahd.com/state_statistics.html
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3976600/>

Start of the Reserve Slides

Our Research

We have consulted with top researchers in this field as well as spoken and shadowed to doctors better learn about this problem

Some Key Statistics and Insights From the CMS



Only 66% of patients stated that their doctors always talked to them about their medicine before giving it to them



13% of patients were not given any information about what to do during their recovery from surgery

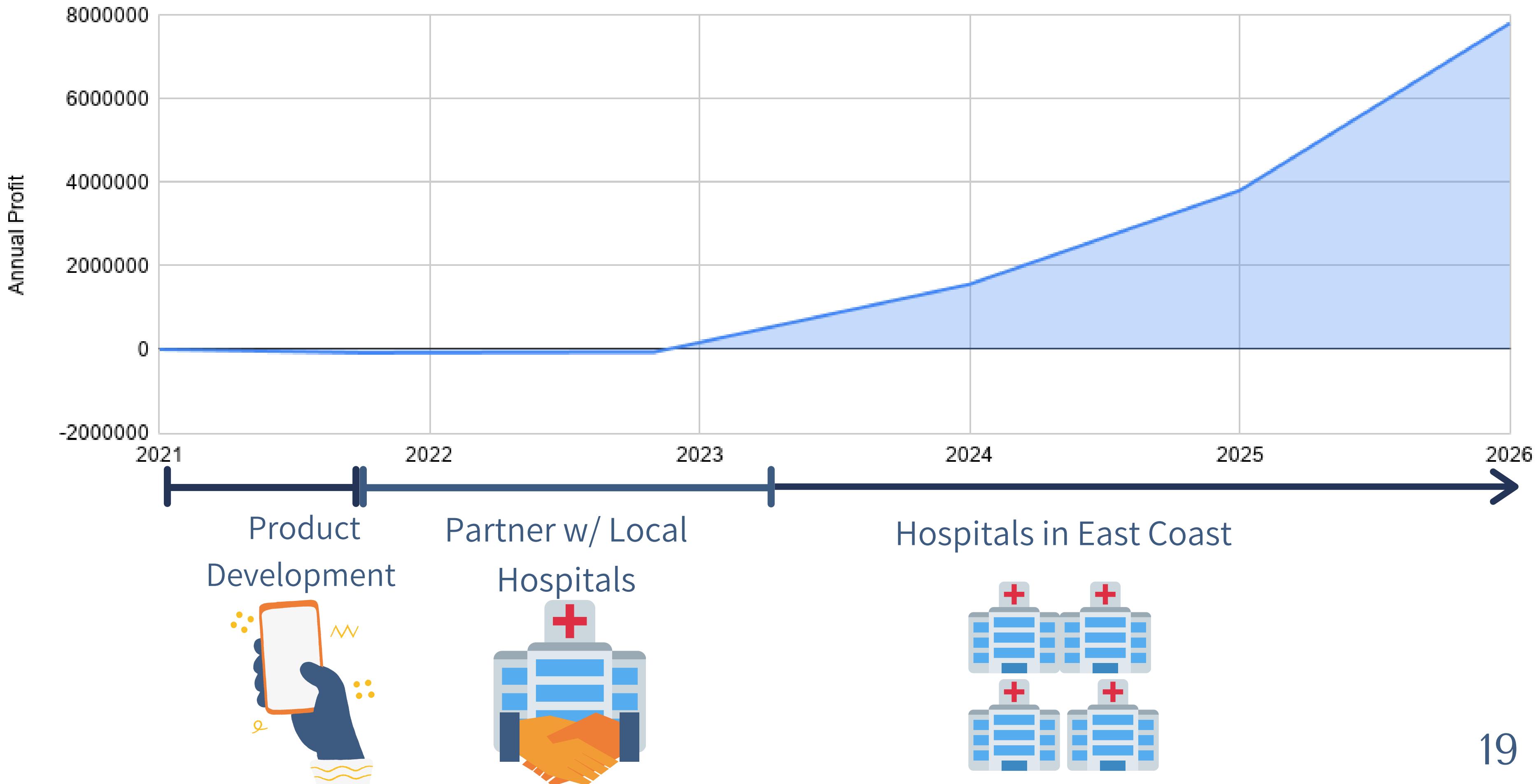


Only 54% of patients felt like they understood the information that given by their providers when they left the hospital



Nationally 15.6% of patients are readmitted to the hospital after discharge

Financial Projections



Privacy

Trend in Medtech

1. More consumer-generated health data by tech advancement
2. Increase senior patients drive demand for digitalization



Trust
Loyalty



Our Promise, your Privacy



HIPAA Compliance

- HIPAA Compliance Cost: \$5,000--\$50,000 depending on coverage
- Data Breach Cost: \$10+ Million & externalities & DISTRUST

Data Privacy

- Small covered entity, HIPAA costs:

Risk Analysis and Management Plan ~\$2,000

Remediation ~ \$1,000 - \$8,000

Training and policy development ~ \$1,000-2,000

Total: \$4,000 - \$12,000

- Medium/large covered entity, HIPAA costs:

Onsite audit ~ \$40,000+

Risk Analysis and Management Plan ~ \$20,000+

Vulnerability scans ~ \$800

Penetration testing ~ \$5,000+

Remediation ~ Varies based on where entity stands in compliance and security

Training and policy development ~ \$5,000+

Total: \$50,000+, depending on the entity's current environment



Data breach costs, fines, and penalties:

HHS fines: up to \$1.5 million/violation/year

FTC fines: \$16,000/violation

Class action lawsuits: \$1,000/record

State attorneys general: \$150,000 – \$6.8 million

Patient loss: 40%

Free credit monitoring for affected individuals: \$10-\$30/record

ID theft monitoring: \$10-\$30/record

Lawyer fees: \$2,000+

Breach notification costs: \$1,000+

Business associate changes: \$5,000+

Technology repairs: \$2,000+



Data Privacy

How our future endeavors tie in with our commitment to data privacy



Expansion in European Market:



1. Data backups are complete and encrypted

- a. **Encryption:** Data at rest encrypted using 256-bit AES encryption.
- b. **Redundancy:** At least two or three separate storage locations.
- c. **Data in transit:** Data transferred using public networks 256-bit AES encrypted.
- d. **Monitoring:** Data backups and backup plans for errors and backup failures.



2. Communication Channels Secured

- a. Strong access controls for the devices sending and receiving texts
- b. End-to-end encryption
- c. Loss prevention for easily misplaced or stolen devices



3. Perform Comprehensive Risk Analyses

- a. Define how PHI flows throughout the organization
- b. Account for the entire PHI lifecycle
- c. Know about specific vulnerabilities
- d. Prioritize threats by likelihood and impact

Liability

Issues

Our app is only a tool it does not diagnose, or treat patients. Any information given by the users cannot be verified and Carian is not responsible for the adverse outcomes of such errors

<https://www.dolbey.com/ehrs-increasingly-included-in-medical-malpractice-lawsuits/>

Calculations for TAM, SAM, SOM

TAM: \$2.53 Billion in 2019

SAM in US for Surgeries:

$(\$20 / \text{Surgery}) * (35 \text{ Avg Surgeries} / \text{Surgical Bed}) * (556,643 \text{ Surgical Beds in US}) + (\$10,000 * 6146 \text{ Hospitals}) = \$451,000,000$

SOM in East Coast for Surgeries:

$(\$20 / \text{Surgery}) * (35 \text{ Avg Surgeries} / \text{Surgical Bed}) * (556,643 \text{ Surgical Beds in US}) * (1067 \text{ Hospitals in E Coast} / 6146 \text{ Hospitals in US}) + (\$10,000 * 1067 \text{ Hospitals in E Coast}) = \$17,500,000$

<https://www.globenewswire.com/news-release/2020/07/30/2070091/0/en/Medication-Adherence-Global-Market-Report-2020-30-Covid-19-Growth-and-Change.html>

<https://www.aha.org/statistics/fast-facts-us-hospitals> <https://www.beckershospitalreview.com/lists/230-hospital-benchmarks-2017.html> https://www.ahd.com/state_statistics.html

Why We Sell To Hospitals?

vs selling to patients

Calculations for Hospital's Net Gain Thru Carian and Hospital Readmission Reduction Program

Average Hospital Yearly Revenue after Hospital Readmission Reduction Program: \$12.9 Million

Average Percent Government Takes through HRRP: 0.71%

Annual Revenue if 0% Taken: \$12,992,244

Average Amount taken from Hospitals: \$92,444

Annual Revenue if HRRP takes 3%: 13,298,969

Costs for Hospital with 3% Taken: \$398,969

Future Avenues

- + Private Practices
- + Chronic Diseases
- + Insurance Companies
- + Electronic Health Record Companies

Older Patients & Phones

So older patients have a hard time using their phones so is this useful to them?

Answer--YES!!!

+ Patient Education

+ Team Cooperation

Patient Education + Trusted Partners

Where are we getting the
information from



Trusted Partners



Provider Sourced



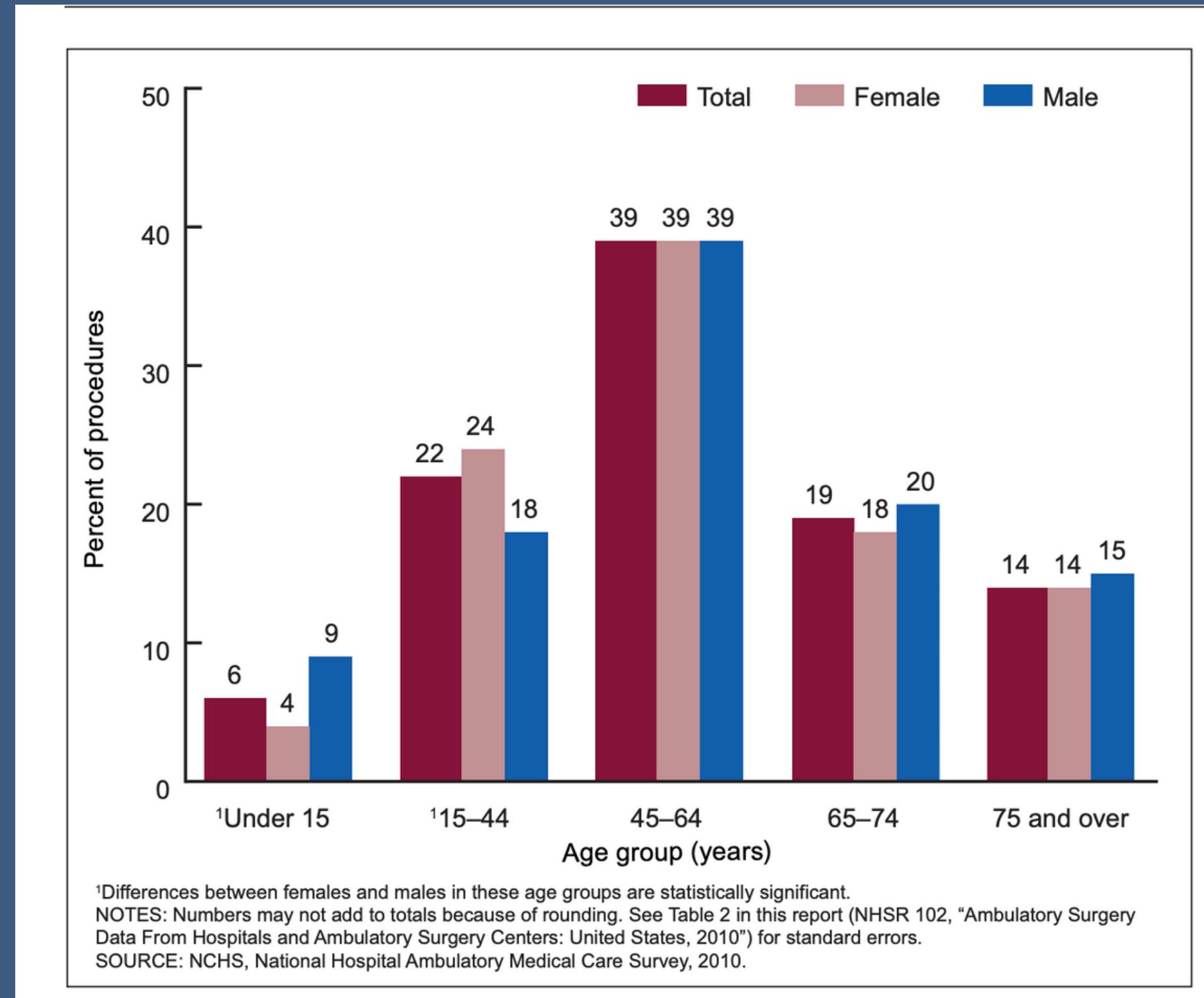
Research Backed



Customizable

Surgical Data-Age

The Age Breakdown Of Who Gets Surgery in the US?



<https://www.cdc.gov/nchs/data/nhsr/nhsr102.pdf>

Percent distribution of ambulatory surgery procedures in hospitals and ambulatory surgery centers, by age and sex: United States, 2010

Surgical Data-Specialty

The Speciality Breakdown of Surgeries in the US?

Seventy percent of the 48.3 million ambulatory surgery procedures were included in the following categories:

- operations on the digestive system (10 million or 21%)
- operations on the eye (7.9 million or 16%)
- operations on the musculoskeletal system (7.1 million or 15%)
- operations on the integumentary system (4.3 million or 9%)
- operations on the nervous system (4.2 million or 9%)

<https://www.cdc.gov/nchs/data/nhsr/nhsr102.pdf>

Causes of Surgical Non- Adherence

Why do patients not follow
their doctors orders?



2010, study found 22% of prescriptions are never even filled



In a VA Puget Sound Health Care System study,
23% of patients undergoing ambulatory surgery
were non-adherent to preoperative medication
instructions

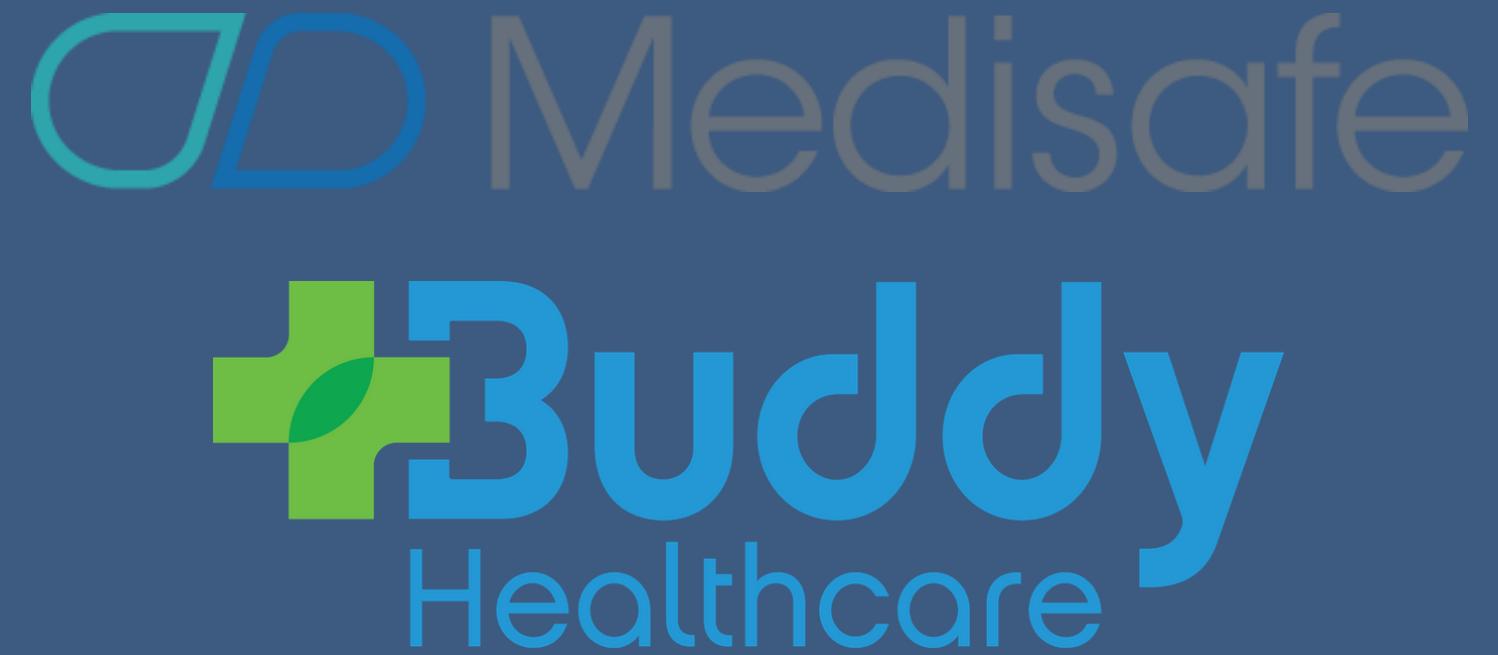


7% of cancellations were impacted by
medication nonadherence and preoperative
education

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3262486/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6370424/>

Our Competitors



Competitor:



Main Points:

- The fastest, most secure, and accurate way to keep track of all your meds
- Private US based Company
- Offers features such as
 - Medication Reminders
 - Drug Interactions
 - Medication Savings
 - Prior Auth
 - Delivery Tracking

<https://www.crunchbase.com/organization/medisafe-project>

<https://www.medisafe.com/solutions/>

Competitor:



The logo for Buddy Healthcare features a green stylized cross icon followed by the word "Buddy" in large blue letters, and "Healthcare" in smaller blue letters below it.

<https://www.crunchbase.com/organization/buddy-healthcare>
<https://www.buddyhealthcare.com/en/>

Main Points:

- Reduces Administrative Burden And Improves Patient Experience And Outcomes in Pre-and Post opt surgery
- Private Finnish based Company
- Offers features such as
 - Patient Education
 - Provider Communication with Patient
 - Medication Adherence

Our Competitor:

SURGIMATE

on schedule.

<https://www.surgimate.com/>

<https://www.crunchbase.com/organization/surgimate>

Main Points:

- Connect managers, schedulers, surgeons, insurance and billing through a single collaborative workflow. (More focused on the surgeons and their business)
- Private US based Company
- Offers features such as
 - Coordinate Surgeries
 - Surgical Forms
 - Track Surgeries

Competitor:



Main Points:

- A better way to communicate between nurses, parents and patients; mostly focused on pre-surgery
- Private US based Company
- Offers features such as
 - Patient Education

<https://www.appcatalyst.com/content-solutions/surgery-partner/>

Why Will Providers Use This?

Why will they use Carian over their old methods?

- + Saves time and resources
- + Better surgical outcomes
- + Easy to use

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1661624/>

Point Of Contact

How will we reach each of our
target markets?

+ Hospitals

+ Providers

+ Patients

The Elderly and Technology

Smartphone adoption among
America's elderly



86% of Americans between the age 50 to 59
use a smartphone



81% of Americans between the age 60 to 69
use a smartphone



62% of Americans between the age 70 and
older use smartphones



40% of older adults are interested in using
medication adherence technology