IMATTER: MOBILE HEALTH APP

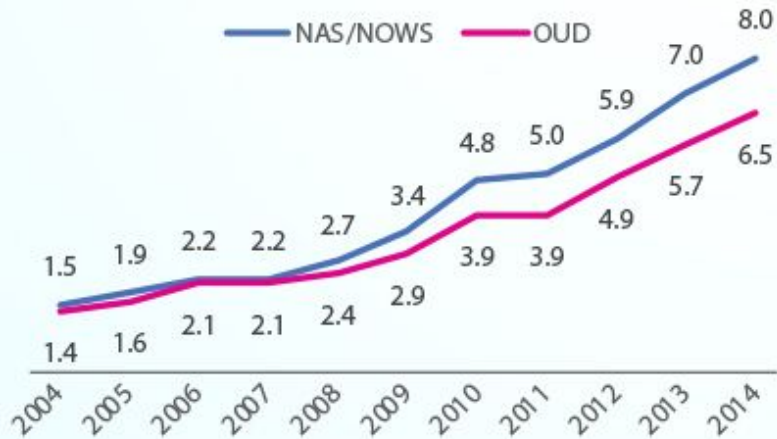## Team ReBoot.

Design Review 3

Members: Bianca Altman, Jennie Dallas, Victoria Leafgren, Isai Martinez, Cindy Valentin

Clients: Dr. Emery Eaves and Dr. Eck Doerry
Mentor: Dr. Eck Doerry

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OPIOID ADDICTION EPIDEMIC

NAS/NOWS and Maternal Opioid Use Disorder on the Rise
Rates per 1,000 Hospital Births

2+ Million Americans
Struggle with Opioid Use Disorder (OUD)
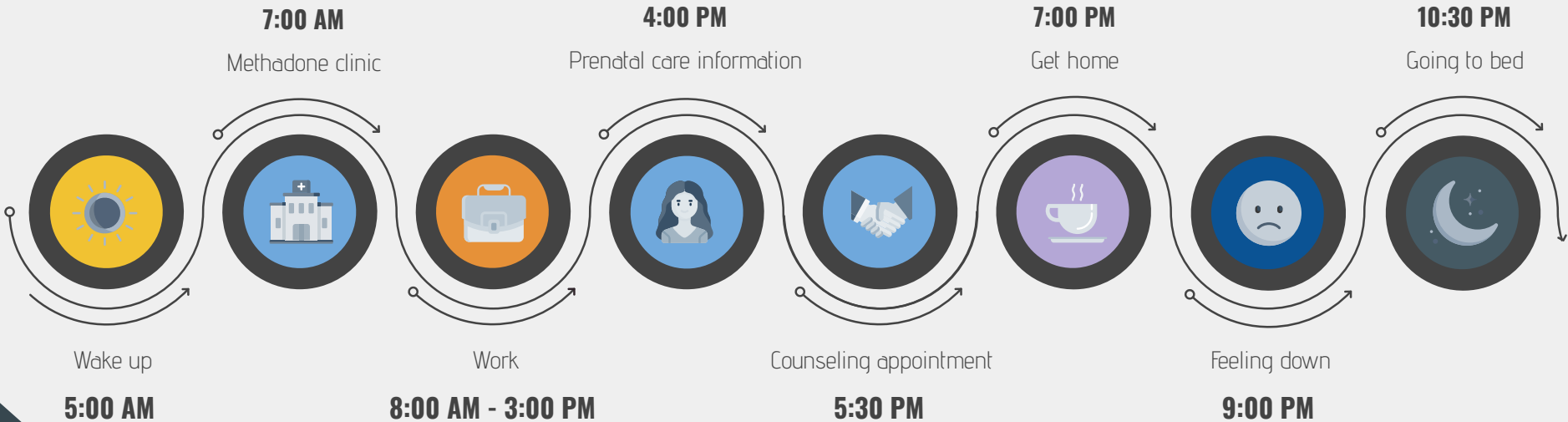
$78.5 Billion
In annual costs for healthcare and more
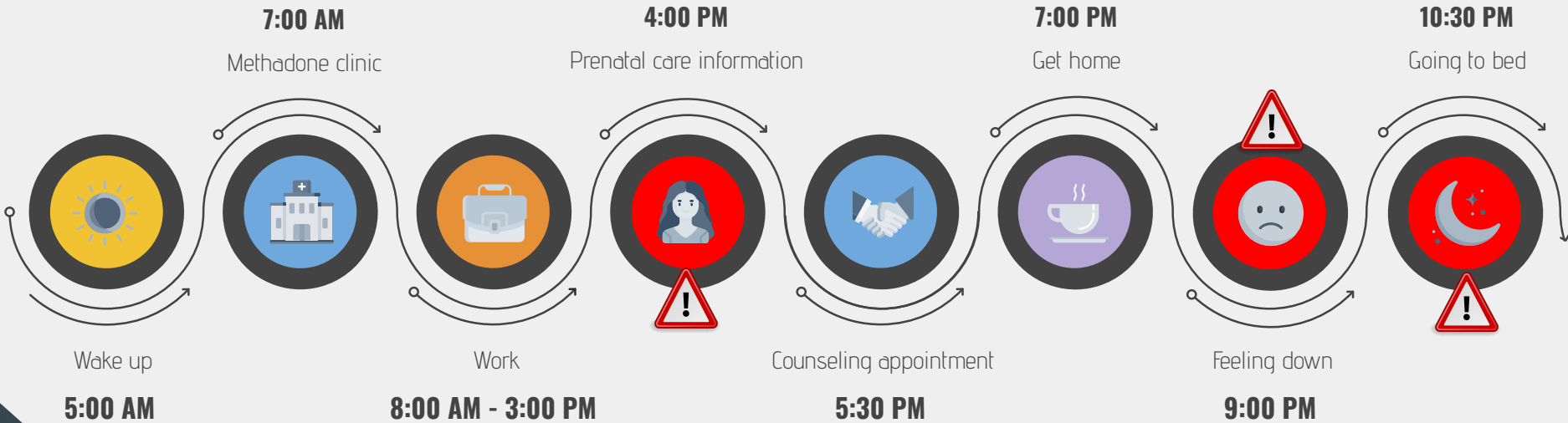
6.5 per 1,000 women
Opioid Use Disorder at delivery

56% relapse rate
For women 6 months postpartum

SUSAN'S DAY: THE CHALLENGES OF TRADITIONAL RECOVERY

7:00 AM
Methadone clinic

4:00 PM
Prenatal care information

7:00 PM
Get home

10:30 PM
Going to bed

Wake up
5:00 AM

Work
8:00 AM - 3:00 PM

Counseling appointment
5:30 PM

Feeling down
9:00 PM

SUSAN'S DAY: THE CHALLENGES OF TRADITIONAL RECOVERY

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Feeling down

9:00 PM

Outcomes:
1) Many women relapse
2) Women in rural areas struggle with staying in program

4

MAJOR OBSTACLES:

🏥 Appointments

👥 Lack of social support

ℹ️ Lack of information access

GOAL:

Alleviate these challenges

DR. EMERY EAVES

Medical Anthropologist

Studies pregnant women with opioid use disorder

5

SOLUTION OVERVIEW

Safe, Secure, Anonymous

Active Learning

Receiving Support

Mobile: Anytime, Anywhere

April Chat Room

02-26-2020 5:12 PM

Minny
Minny has entered the chat

02-26-2020 5:12 PM

Minny
Hello

02-26-2020 5:15 PM

AprilMomma
AprilMomma has entered the chat

02-26-2020 5:15 PM

AprilMomma
Hi! How are you?

02-26-2020 5:15 PM

Minny
Not great...

02-26-2020 5:15 PM

AprilMomma
Oh no, do you want to talk about it?

Enter message →

Home   Chat   Calendar   More

iMATter

Currently I am feeling: sad

😷 🙂 😊 🙂 😟 😊 😡

37 Weeks Pregnant
Your baby is as big as a canary melon.

Stay Strong!
Remember you have your cohort to support you and health modules available to you!

OK

Baby
37 W

Your baby has developed more dexterity in his fingers. He can now grasp onto smaller objects, like a toe or his nose. -whattoexpect.com

Learning Center

The learning center offers modules you can take to learn and earn points.

Go to Learning Center →

Home   Chat   Calendar   More
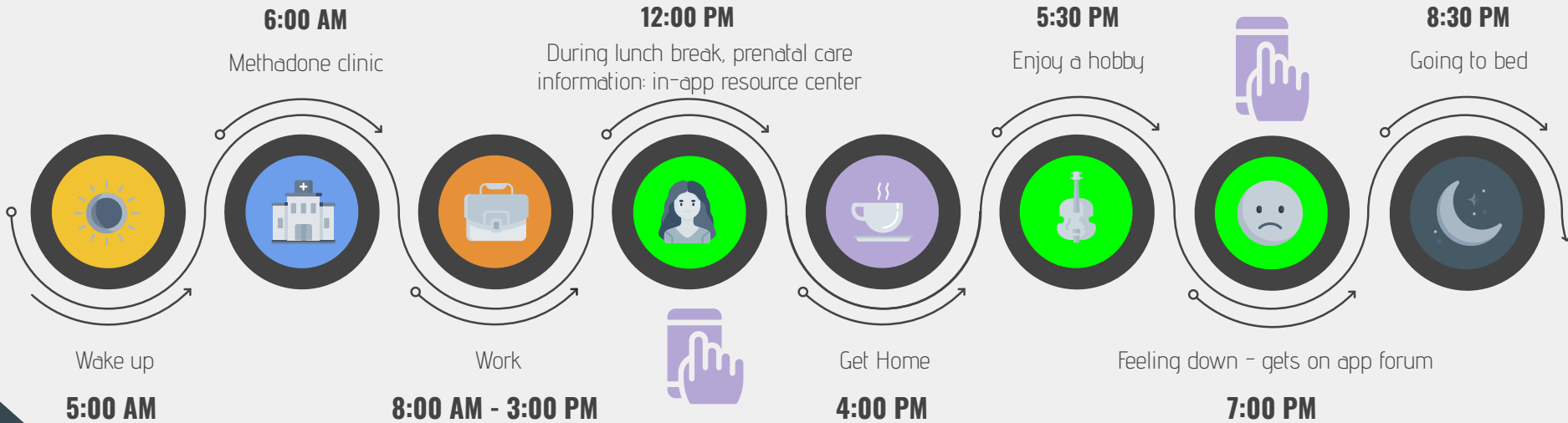
6

- **24/7 Access to Key Medical Information**
  - Info desk forum, resources finder

- **Engaging Social Environments**
  - Cohort chat room, educational quizzes, info desk forum

- **Tailored to Pregnancy eJourney (pregnancy calendar)**

- **Personal Planning Tools – Calendar**
  - Medication reminders
 - appointment reminders

SUSAN'S DAY WITH IMATTER

6:00 AM
Methadone clinic

12:00 PM
During lunch break, prenatal care
information: in-app resource center

5:30 PM
Enjoy a hobby

8:30 PM
Going to bed

Wake up

Work

Get Home

Feeling down - gets on app forum

5:00 AM

8:00 AM - 3:00 PM

4:00 PM

7:00 PM

What iMATter solved:
- Susan now has time for herself
- Being alone at night is now a night spent with the support of a cohort
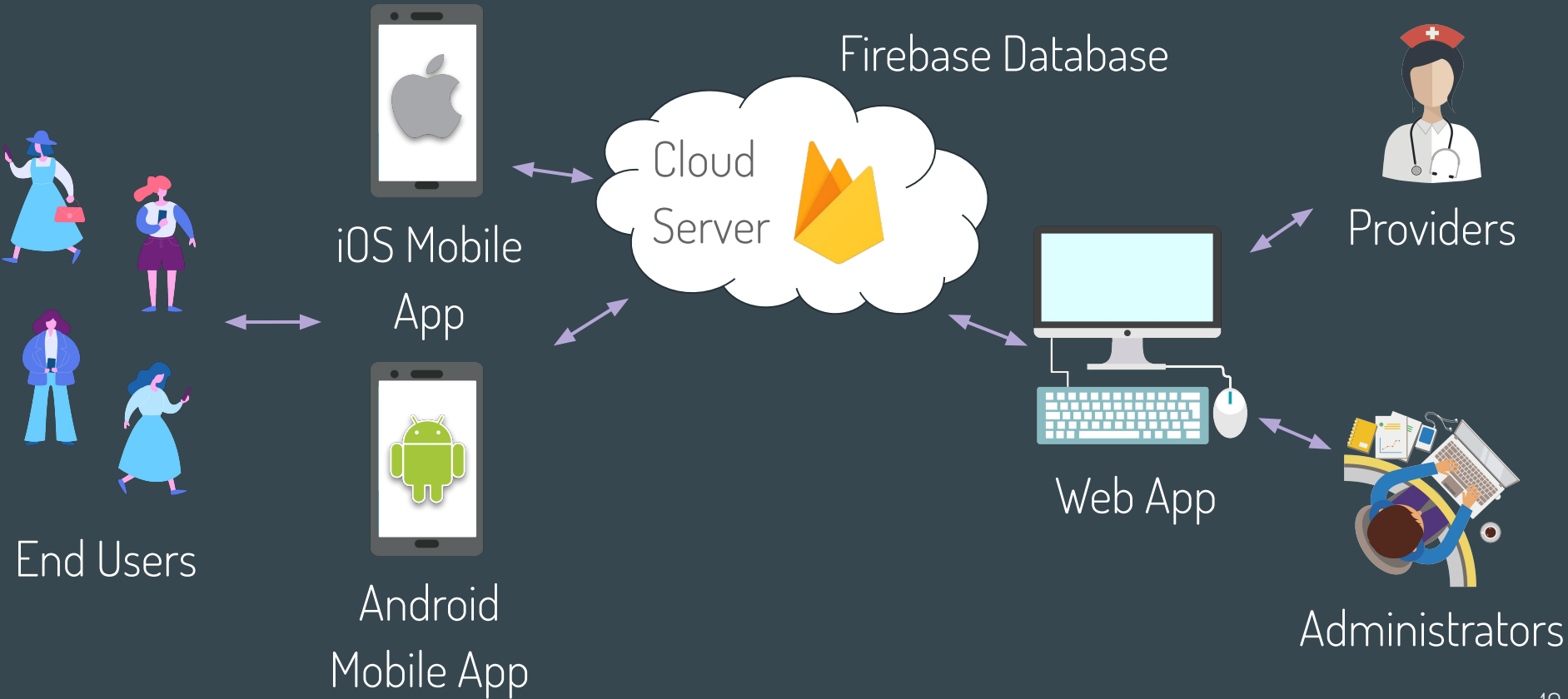
8

REQUIREMENTS OVERVIEW

DOMAIN-LEVEL

6

FUNCTIONAL

57

PERFORMANCE

25
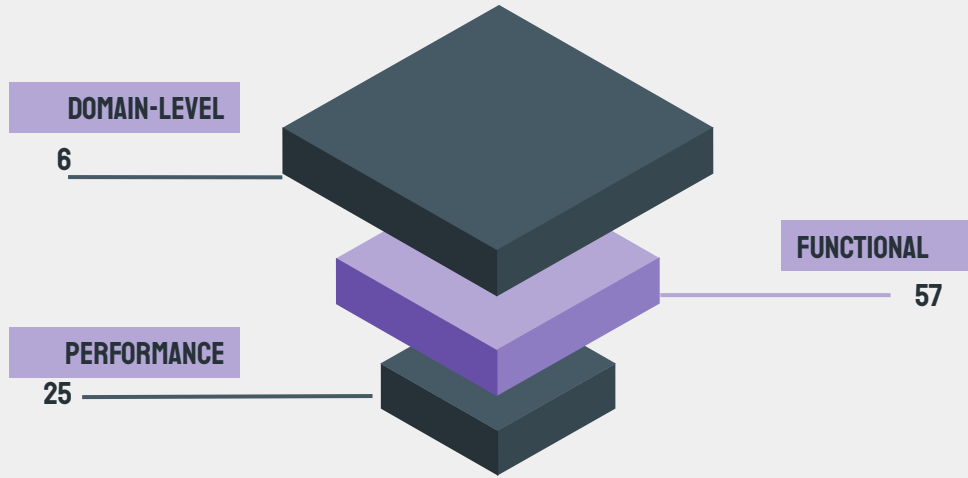
REQUIREMENTS ACQUIRED BY:

- Client Meetings
- Use Cases
- Iterative Refinements

HIGH-LEVEL KEY REQUIREMENTS

1. Support Accounts
2. Chat Room
3. Learning Center
4. Information Desk Forum

5. Surveys
6. Resource Center
7. Calendar
8. Notifications

End Users

iOS Mobile App

Android Mobile App

Cloud Server

Firebase Database

Web App

Providers

Administrators

ARCHITECTURE AND IMPLEMENTATION
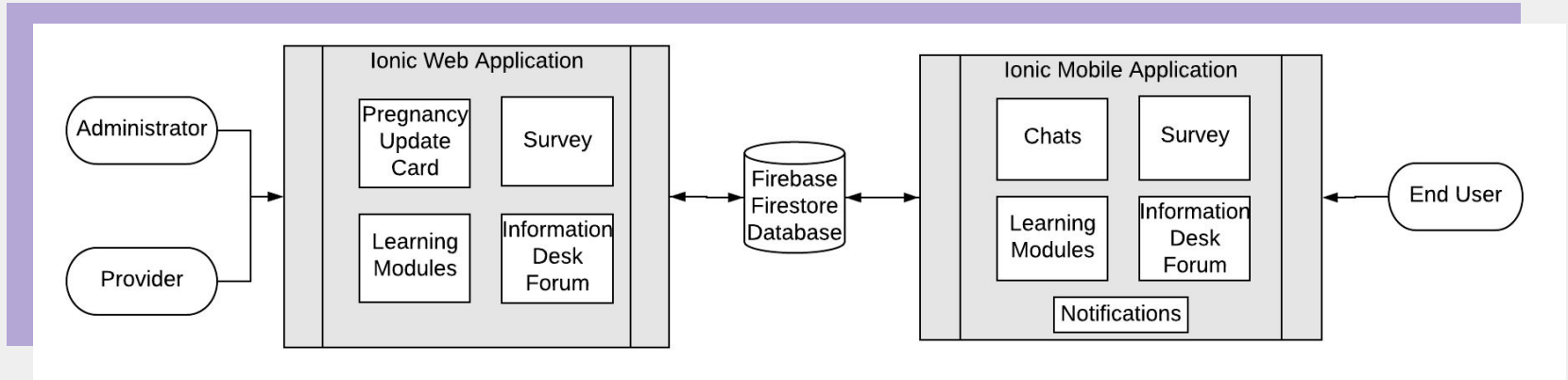
TECHNOLOGIES USED

- **Ionic Framework**
  - Cross Platform
  - Typescript, HTML, CSS

- **Firebase**
  - Database
  - Cloud Functions (JS)
  - Push Notifications

- **AWS**
  - Linux Server
  - CRON Jobs

DATABASE IMPLEMENTATION
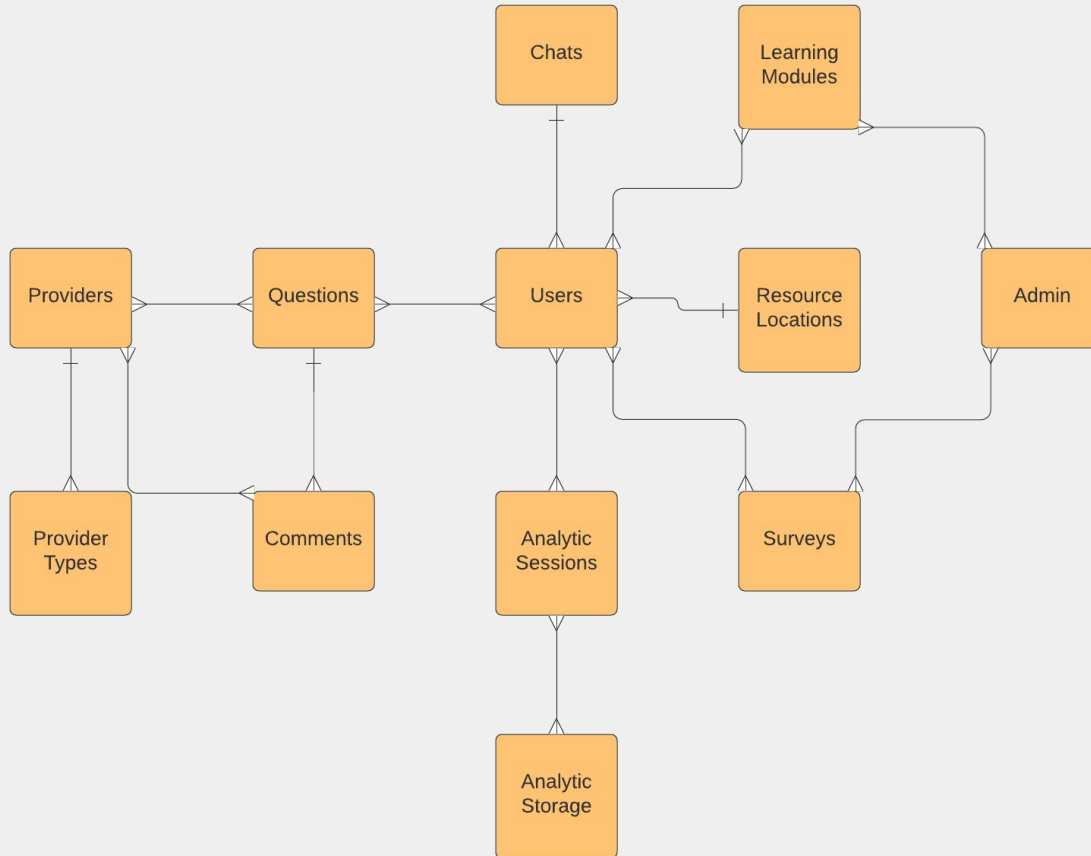
- Firebase DataBase

- 24 Collections or "Tables"

- Live Synchronization and updates

- Built on Google Infrastructure

← Mothers and Methadone Module Details

Module is Active

About Module

Module Title
Mothers and Methadone

Module Description
This is a video about taking methadone while being pregnant.

Display Module During Weeks (enter 0 for always visible)
0

Days Visible Before Expiration (enter 0 for never expires)
0

Module Reward Points (Total Quiz Question Points)
6

Module Contents
Please watch this video to learn more about what it is like to take methadone during your pregnancy.

Module Media

Module Video ID (YouTube Video ID)
LjT8WvuaFUE

Mothers and ...
▶

Module PowerPoint URL (src)

Module Quiz

Withdrawal can cause miscarriage

The mother should monitor the baby for signs of withdrawal with the nurse

ADD QUIZ QUESTION

Link to Another Learning Module

Next Module   None

✓ ADD LEARNING MODULE

Module Quiz Question

Question Information

Quiz Question
Withdrawal can cause miscarriage

Points Worth
3

Answer Choices

A
True

B
False

C

D

Correct Answer
A   ⌄

DELETE   SAVE

← Survey Details

Choose the name of the survey
How was your first week experience?

Choose the type of survey   After user Joining

Provide a general Description of the survey
This is a survey about your experience so far using iMATter. The survey will take about 3 minutes to complete.

Choose one or more days the survey is released after a user joins(separate by comma)
7, 14

Choose the number of days after release before the survey expires
3

URL
http://nau.co1.qualtrics.com/jfe/form/SV_bf43g2fjxQcfhS5

Specify the number of points this survey is worth
5

SAVE

USER VIEW OF ADMIN INPUT DATA IN MOBILE APPLICATION

Learning Module

Learning Center

New Modules

Care for Pregnant Women With Opioid Use Disorder
Description: Describes the standard ways pregnant women with opioid use disorder are treated during recovery.

Mothers and Methadone
Description: This is a video about taking methadone while being pregnant.

Viewed Modules

Rise in Neonatal Abstinence Syndrome
Description: Presents some general statistics on the increase of pregnant women with OUD and the rising rates of babies born with NAS

1 out of 3 Quiz Attempts Taken

Mother With Opioid Use Disorder
Description: A pregnant mother with opioid use disorder (OUD) talks about her journey.

0 out of 3 Quiz Attempts Taken

Mothers and Methadone Mod...

11:49 / 11:54

Questions

Withdrawal can cause miscarriage - 3 point(s)
- A. True
- B. False

The mother should monitor the baby for signs of withdrawal with the nurse - 3 point(s)
- A. True
- B. False

SUBMIT   RETAKE QUIZ

Quiz Results: 1 out of 2 question(s) correct
Number of Attempts: 1 out of 3

Survey

Available Surveys

Available Surveys

How was your first week experience?
This is a survey about your experience so far using iMATter. The survey will take about 3 minutes to complete.

Points: 5

Completed Surveys

Analyzing Current Situation
Provide some feedback on your current situation

Points: 5
Completed

PROTOTYPE REVIEW - WEB APP [PROVIDER PORTAL]

Information Desk

ALL QUESTIONS	QUESTIONS YOU ANSWERED

🔍 Search

Posted: 04-05-2020 6:37:18 PM
Can I breastfeed while taking methadone?
Replies: 1

Posted: 02-23-2020 1:15:41 AM
Taking methadone while pregnant
Replies: 3

Information Desk

MinnieMae
Posted at: 04-05-2020 6:37:18 PM

Can I breastfeed while taking methadone?

I have heard methadone is not good for the baby, is it okay for me to breastfeed?

Answers:

bja99
Clinic Worker
Posted at: 04-05-2020 6:39:26 PM

Yes, in fact it is actually encouraged. While breastfeeding on methadone will expose the infant to methadone, the benefits of breastfeeding outweigh the minimal exposure an infant can get. Just make sure that your baby's doctor is monitoring them.

COMMENT

USER MOBILE APP - COHORT CHAT ROOM

iMATter 1:40 AM
iMATter Chat Room
There is a new message in the chat room

March Chat Room

MinnieMae has entered the chat

Clover has entered the chat

04-05-2020 6:56 PM

Clover
hello

04-05-2020 6:57 PM

MinnieMae
Hi. How are you?

Enter message →

Home | Chat | Calendar | More

March Chat Room

MinnieMae has entered the chat

Clover has entered the chat

04-05-2020 6:56 PM

Clover
hello

04-05-2020 6:57 PM

MinnieMae
Hi. How are you?

04-05-2020 6:57 PM

Clover
not great...

Enter message →

Home | Chat | Calendar | More

March Chat Room

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04-05-2020 6:56 PM

Clover
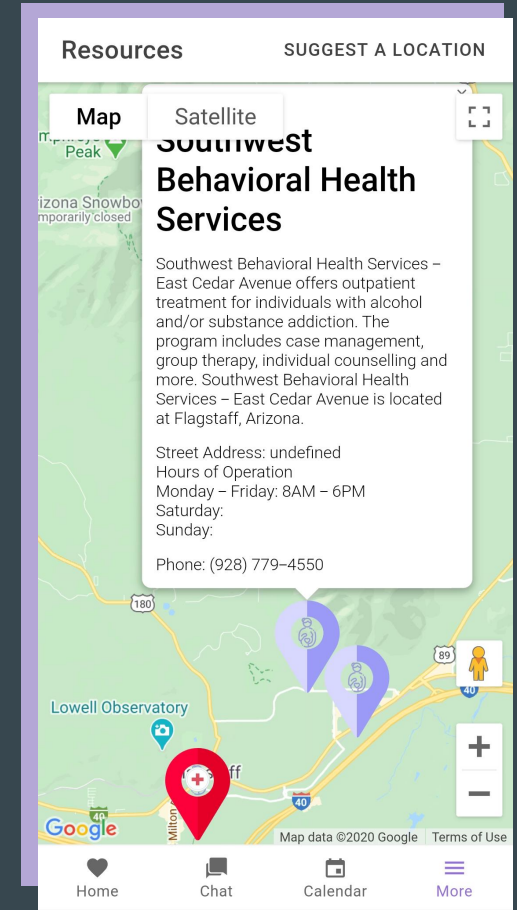hello
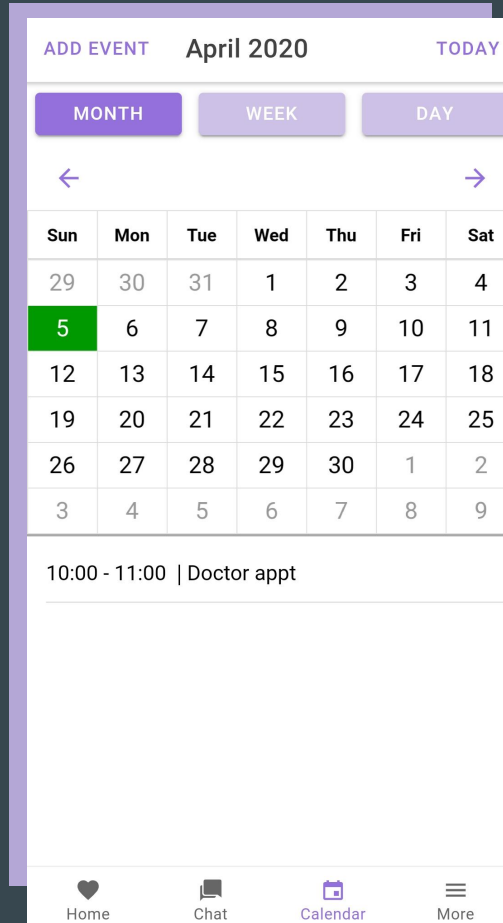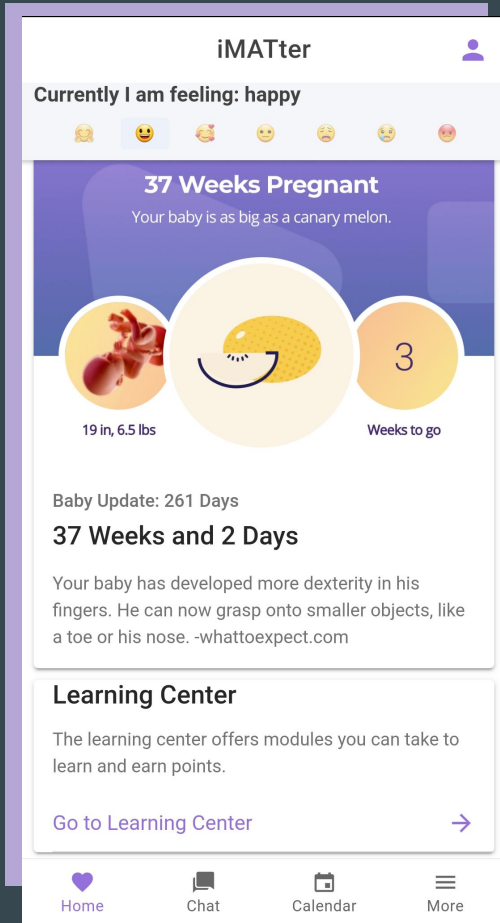
04-05-2020 6:57 PM

MinnieMae
Hi. How are you?

04-05-2020 6:57 PM

Clover
not great...

04-05-2020 6:57 PM

MinnieMae
Oh no. Do you want to talk about it?

Enter message →

Home | Chat | Calendar | More

CHALLENGES AND RESOLUTIONS

CHALLENGE	SOLUTION
Synchronizing Data Between Mobile Apps and the Web App	Google's Firebase and Firestore database
Timed Events Triggered When User Not In App	Scheduled jobs in a Linux server run by Amazon Web Services
Push Notifications	Firebase Messaging service with Cloud Function.

ReBoot.

Integrating Frameworks	Jan 1 - Jan 21
Database Integration	Jan 12 - Mar 16
Mobile Application Development	Jan 12 - Mar 16
Outline User Interface	Jan 13 - Feb 4
Web Application Development	Jan 20 - Mar 16
Testing and Refinement	Mar 16 - Apr 19
User Testing	Mar 31 - Apr 14
Unit Testing	Mar 31 - Apr 14

Alpha Prototype Completed
Mar 15

Jan   Feb   Mar   Apr   2020

Today

20
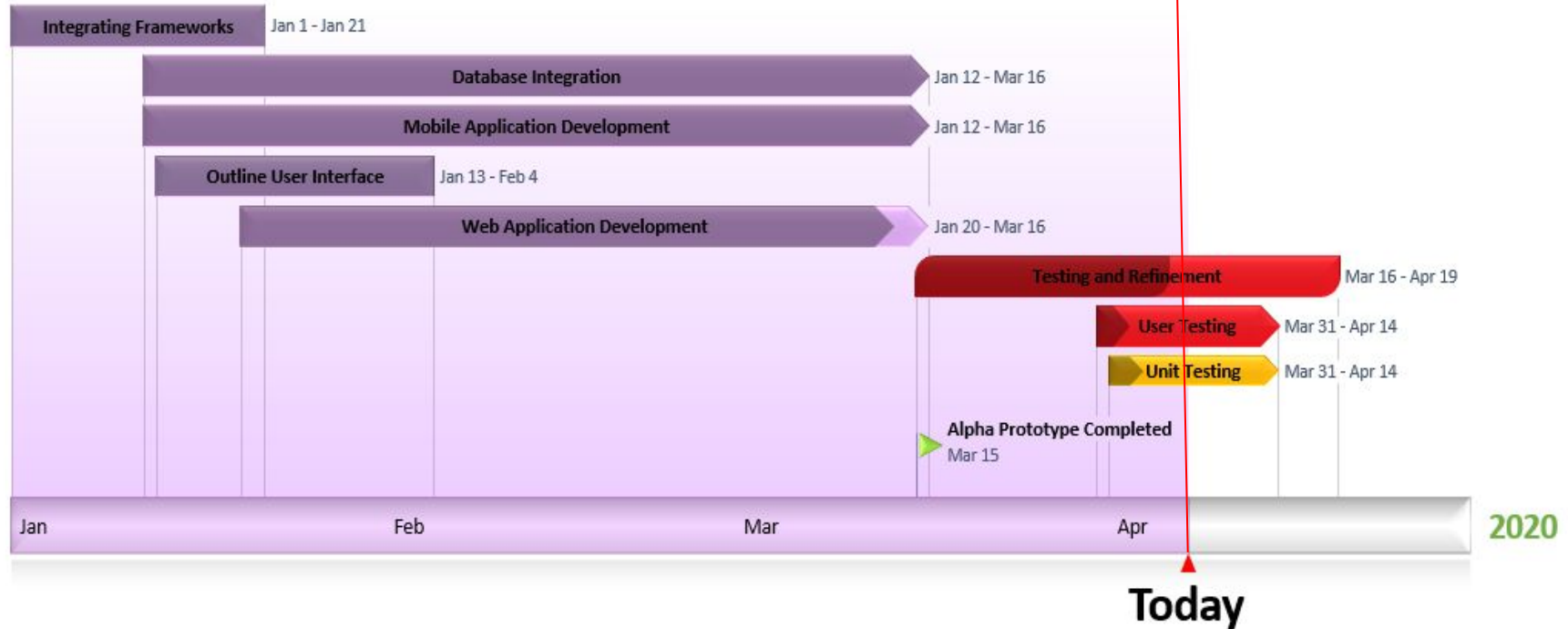
TESTING PLAN

Unit Testing	Integration Testing	Usability Testing
Tested Modules: **14 units**	Ensuring web, mobile and database components communicate	Our Main Focus
		Pair Testing: **2 sessions**
Unit Test : **20 tests**	*Integration Tests*: **14 tests**	Video call walk through with user manual

Changes:
- User Interface communication
- Improve Validation forms

FUTURE WORK

User Interface	Layout of Information Increase in Users
Timed Functions	Transfer to Cloud Functions
Private Messages	Based on Moods

CONCLUSION

Solution:

Mobile application with:
- Forum
- Interactive Components
- Information Desk
- Learning Center
- Notifications
- Research Analytics

Problem:

Pregnant women with opioid addictions have a hard time with recovery programs

Mobile Application:

Safe environment, social forum, information and support