MedGlass

Courtney Boire | Interactive IV

Fall 2015

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DATA & RESEARCH

PROBLEM STATEMENT

Medical records aren’t advancing with the digital world as effectively as they could be to make the overall hospital system as seamless as possible.

PROJECT GOALS

The overall goal is to streamline the hospital experience through:

Compiling all of the patient's medical information in one location that can be easily accessed by each of the patient's doctors.

Aiding the doctor in evaluating the patient; assessing all symptoms and making the correct diagnosis as expertly as possible.

Systematizing the technology in the hospital to make patient information more readily available.

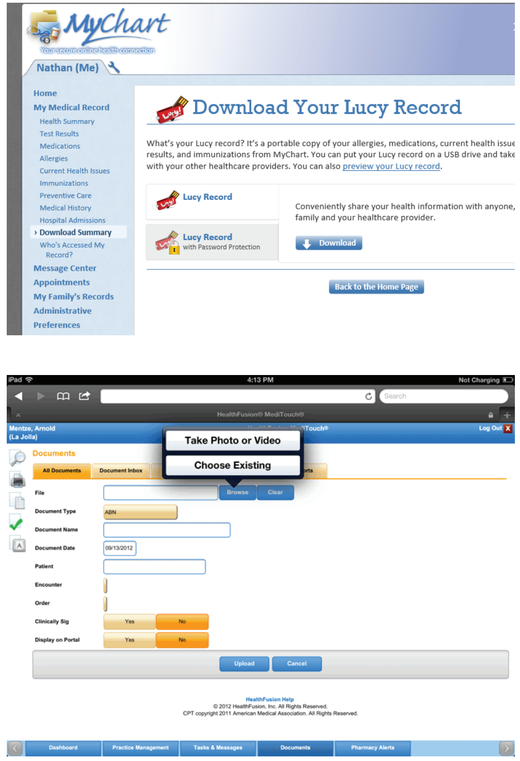
TARGET AUDIENCE

The target audience is mainly medical professionals, but in turn, it will also be beneficial to anyone in the healthcare industry, as well as patients.

COMPETITIVE ANALYSIS

FILE FOLDERS

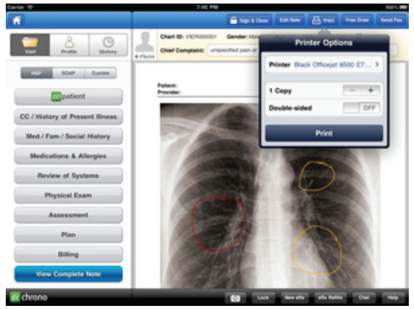
Manual files are what hospitals and doctors offices have been using for decades to hold patient information. The problem is that all the information is analogue, so it makes it harder to transfer that information to other doctors, to compare patient progress over time, and to keep everything for one patient in one place.

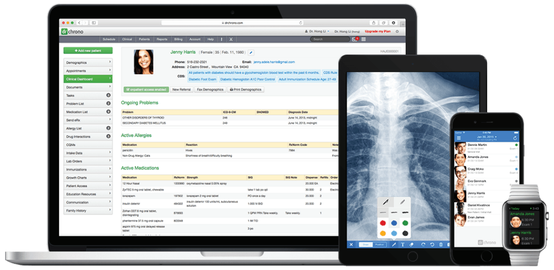


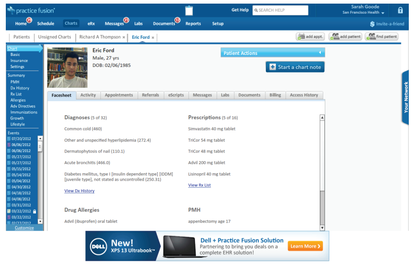
MyCHART, MediTOUCH and other EHRs

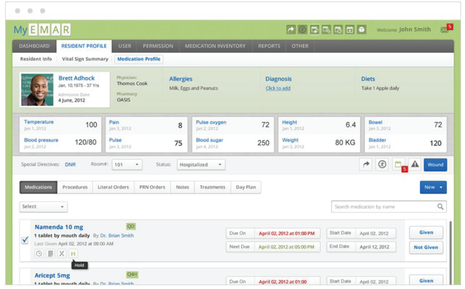
An EHR is an electronic health record. These records are kept in whatever database software the practice chooses to use and can be shared across different health care settings. They can include demographics, medical history, medication and allergies, immunization status, laboratory test results, radiology images, vital signs, personal statistics like age and weight, and billing information. The problem with these is essentially the overall look and feel of them, and they're not used for real time data, it all needs to be manually added.

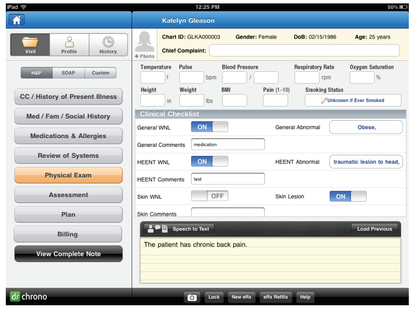
TREND RESEARCH











01 Cluttered, Verbose Interface

02 Left Rails

03 Light Colors

04 Lack of Charts and Graphical Information

05 Poor Hierarchy

PERSONAS

Thomas Boyd, MD | 38

Thomas is a neurologist at Fletcher Allen Hospital in Burlington, VT. He studied biology at Harvard and got his MD at Columbia. He specializes in epilepsy and neurophysiology, and is fairly new to Fletcher Allen Hospital. He obtained his current job there within the last year.

Poppy Andrews | 21

Poppy is a senior business administration major at Plattsburgh State University in upstate New York. She loves staying active whenever she can, especially playing intramural sports and hiking in the Adirondacks.

USER STORY

Thomas Boyd, MD | 38

Neurologist at Fletcher Allen Hospital

Specializes in epilepsy and neurophysiology

Started working at Fletcher Allen within the last year

Last year, Dr. Boyd moved back home to where he grew up in St. Albans, VT, in order to be able to take care of his mother who recently fell ill. He got the job at Fletcher Allen with help from one of his pediatric doctors from his youth. So far, it has been a good fit. Since MedGlass is used universally across all hospitals and medical practices, the transition into learning the workings of a new hospital have been very easy for him. He hasn't had to learn a new system for EHRs and can spend more of his time becoming familiar with the hospital and his new patients.

Dr. Boyd is making the rounds on one of his regular shifts on Friday night, when he gets alerted about the pending arrival of a young woman who needs to be treated for a series of seizures. He goes to check-in and pulls up the information on the alert. He searches the name that comes up on the alert and sees that she is in the system. He grabs a patient tablet and enters her medical ID. He learns that the individual was treated at Fletcher Allen for a similar incident when she was 10 years old by Dr. Bingham, who is out of town for the week. He studies her medical records from her week-long visit at the hospital 11 years ago and it helps him to figure out an immediate plan of action when she arrives minutes later.

When finally talking to her about what happened, Dr. Boyd records the conversation. MedGlass is able to pick out keywords from her account of the night and generates a list of possible problems. Dr. Boyd cross references this with the recording of her visit with Dr. Bingham and sees that the same thing is happening all over again. He schedules an EKG and compares the results of all the patient's previous EKGs. He is able to see patterns and arrives at a diagnosis without having to undergo further testing.

USER STORY

This is an example of a passive user, who will benefit from the system without direct interaction with the product.

Poppy Andrews | 21

Student at Plattsburgh State University

Studies Business Administration

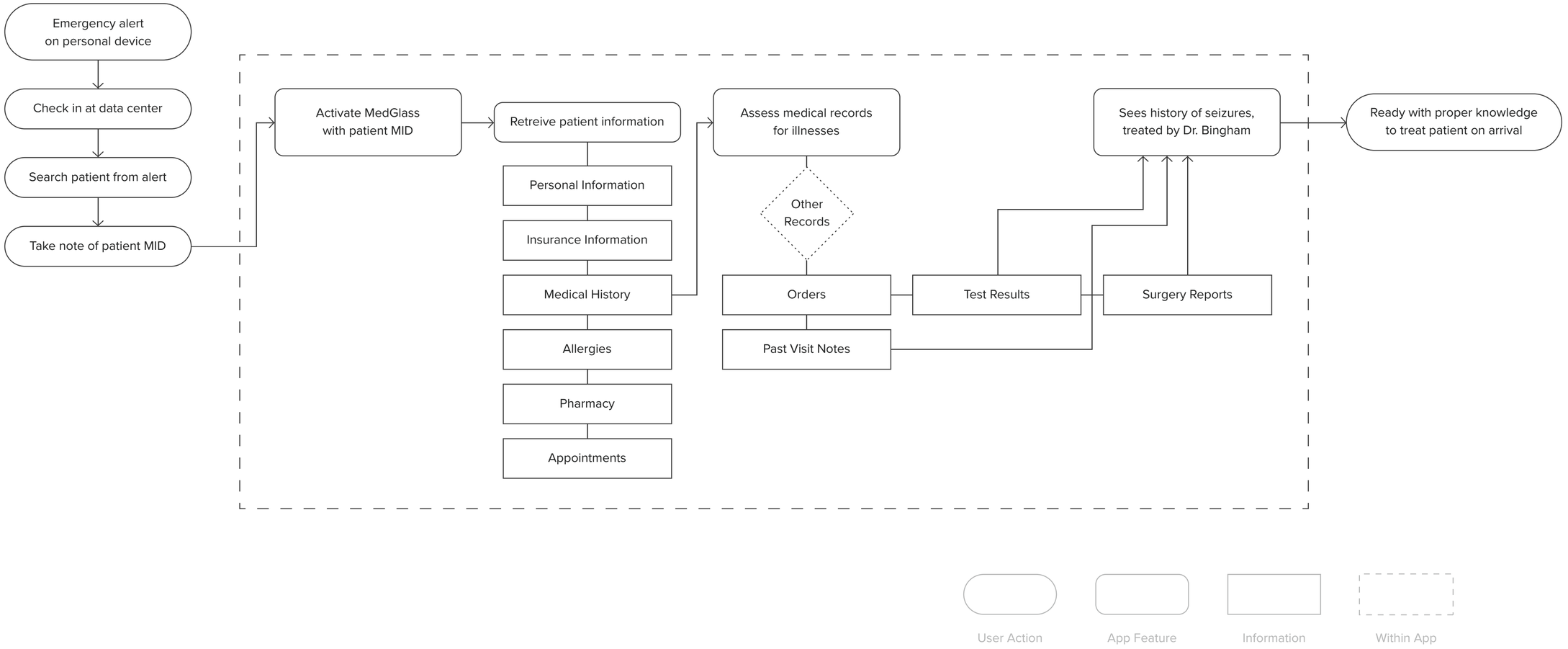
Likes hiking and being outdoors

When Poppy was 10 years old, she had a series of seizures one night following a day of sports-related summer camps. She was rushed to CVPH hospital in Plattsburgh and was eventually sent to Fletcher Allen to be tested under the watchful eye of pediatric neurologist Peter Bingham. She was diagnosed with an ideopathic epilepsy and spent the next year on medication.

Fast forward 11 years, Poppy is in her final year of college, ready to enter the real world. Poppy and some friends decide to go get drinks after a long week of pulling all nighters studying for midterms. She is at home getting ready with her best friend when she starts getting waves of dizziness. She writes it off as already feeling a little buzzed from the pregame and continues to get ready. Poppy and friend get picked up by the rest of the group and park downtown before walking to the bar. On the walk, Poppy starts to feel dizzy again and has to stop for a second. Her friend asks her if she's okay and she can't find the words to respond. She wakes up a minute or so later, laying on the sidewalk, surrounded by worried faces. Everyone is aware of the incident Poppy has had with seizures before and have already called 911. Even though the ambulance is on it's way, Poppy thinks she'll be fine and doesn't need help. Upon arrival, Poppy reluctantly walks toward the ambulance and collapses into a seizure again. The episode is shorter this time, but Poppy is much more disoriented afterwards. She is then rushed to Fletcher Allen Hospital where she was treated previously. She has one more seizure along the half-hour ride. When she arrives at the hospital, Dr. Thomas Boyd is waiting, ready to take proper action to help Poppy.

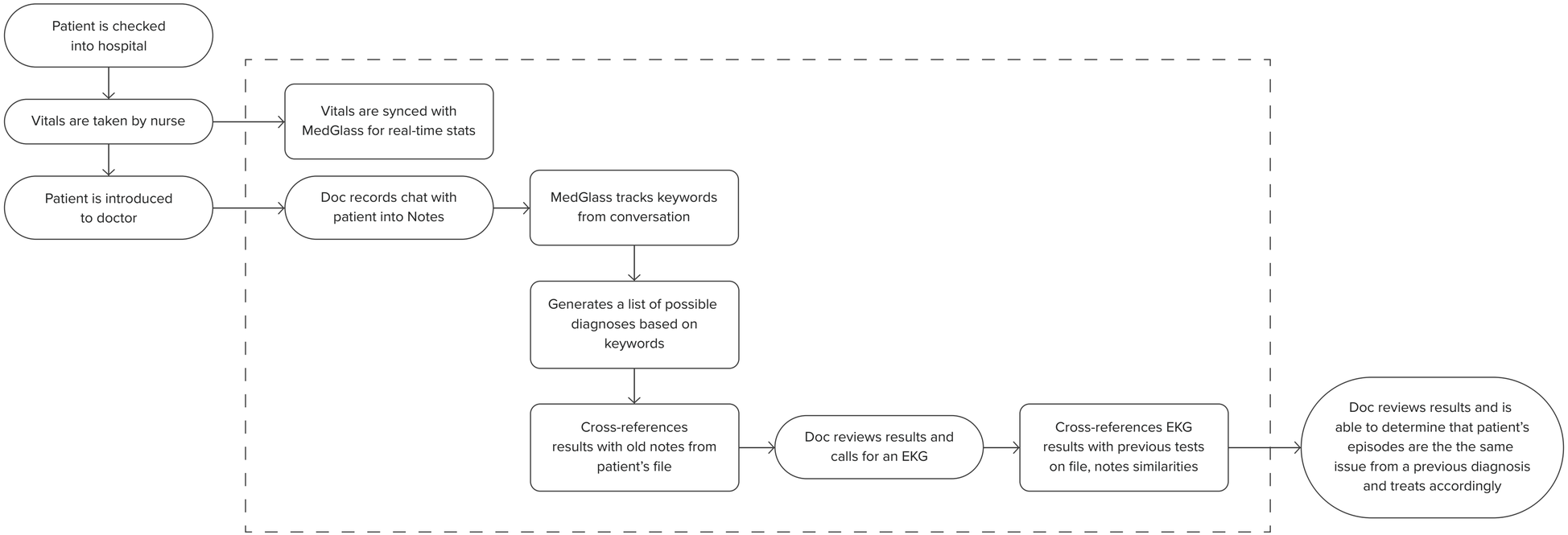
USE CASE SCENARIO

Dr. Boyd receives an emergency alert while making rounds at the hospital.



USE CASE SCENARIO

Dr. Boyd is treating Miss Andrews after her arrival at the hospital.



FEATURES & STRUCTURE

CORE FEATURES

ARCHIVAL

The system acts as an Electronic Health Record at its core. It is an archive of everything the patient has medically experienced in his or her life.

CROSS PLATFORM

The system works across platforms in the hospital to display content on alternate screens or devices.

ASSISTIVE

The system has the ability to act as a second set of ears in the room when meeting with a doctor. It picks up keywords from your conversation with the doctor, and helps with proper diagnosis.

STREAMLINE

Overall, the system should make the entire hospital environment run more smoothly, but should also bridge the gap between multiple practices and hospitals.

INFORMATION ARCHITECTURE

PATIENT INFORMATION

- Name
- Age
- Sex
- Location
- Medical ID
- Date of Birth
- Insurance Info
- Pharmacy
- Allergies
- Medical Issues Overview
- Appointments

MEDICAL INFORMATION

ADVANCED DIRECTIVE
- Living Will
- DNR

MEDICATIONS
- Past Medications
- Present Medications

PERSONAL MEDICAL HISTORY
- Physical Records
  - *Weight*
  - *Height*
  - *BMI*
  - *Blood Pressure*
  - *Temperature*
  - *O2 Levels*
  - *Heart Rate*
  - *Cultures*
- Test Results
  - *Lab Values*
    - *X-Rays*
    - *MRI, CT, EEG, ECG, EKG, etc.*
  - *Bloodwork*
- Surgery Reports
- Other Doctors

FAMILY MEDICAL HISTORY
- Member of Family/Relation
- Issue
- Deceased (y/n?)
- Family Medical History

MEDICAL NOTES
- Search
- Filter
  - *Physician*
  - *Clinical Indication*
  - *Type of Exam*
  - *Date*
- New Note
  - *Record*
    - *Target/Display keywords*
    - *List Possible Diagnoses*

DEVICE STRATEGY

GLASS TABLET

A glass tablet would be a viable option for this interface because it is lightweight and easy to store a multitude of. The tablet is roughly a bit smaller than a file folder is, and about the same thickness, if not thinner, than a folder is once filled with papers. The transparency allows for less bulk and easy comparison alongside other devices.

GRID SYSTEM

Specs

ORIENTATION

1920 x 1080

Landscape

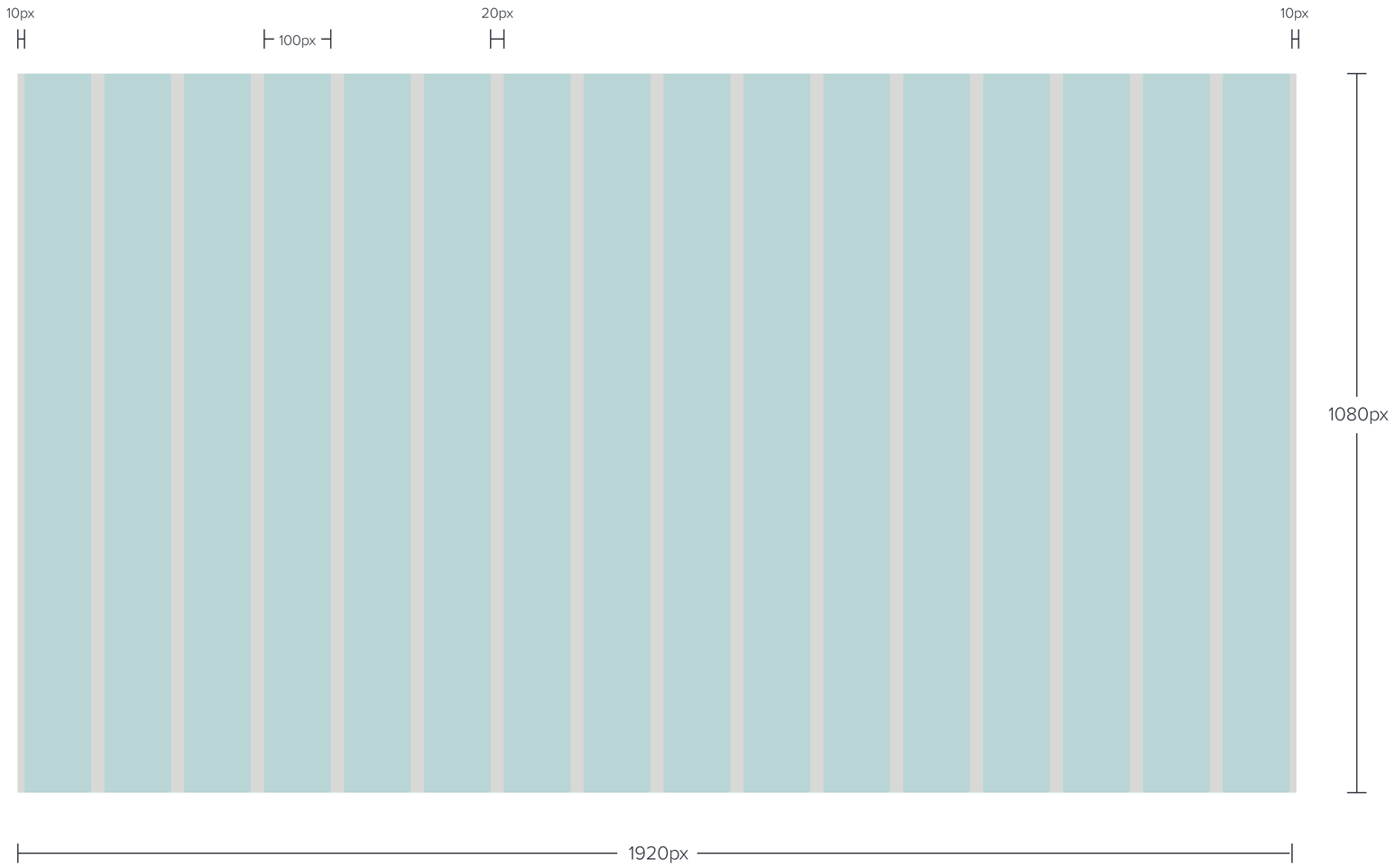
GRID

16 Column Grid

100px columns

20px gutters

10px edge margins



CORE UX BREAKDOWN

01 MENU

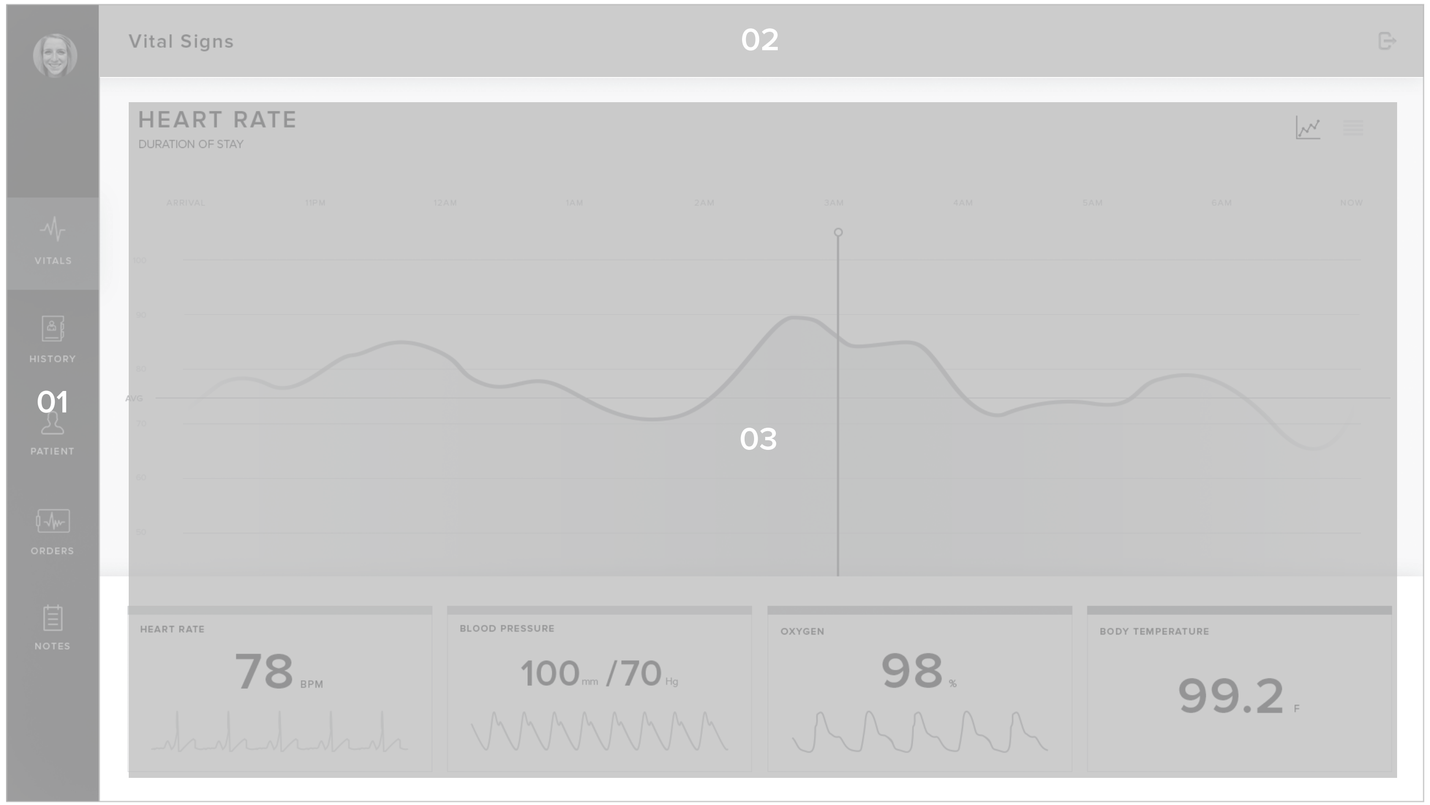
The left 125px are the global navigation for the app.

02 TITLE

The top 100px are the tile area to show where in the app the user is.

03 CONTENT

Content module contains all the core information within the interface.



WIREFRAMES

WIREFRAMES

SPLASH SCREEN

Medical ID

Each patient has a specific Medical Identification number and card that the doctor uses to access the patient's portal in MedGlass.

WIREFRAMES

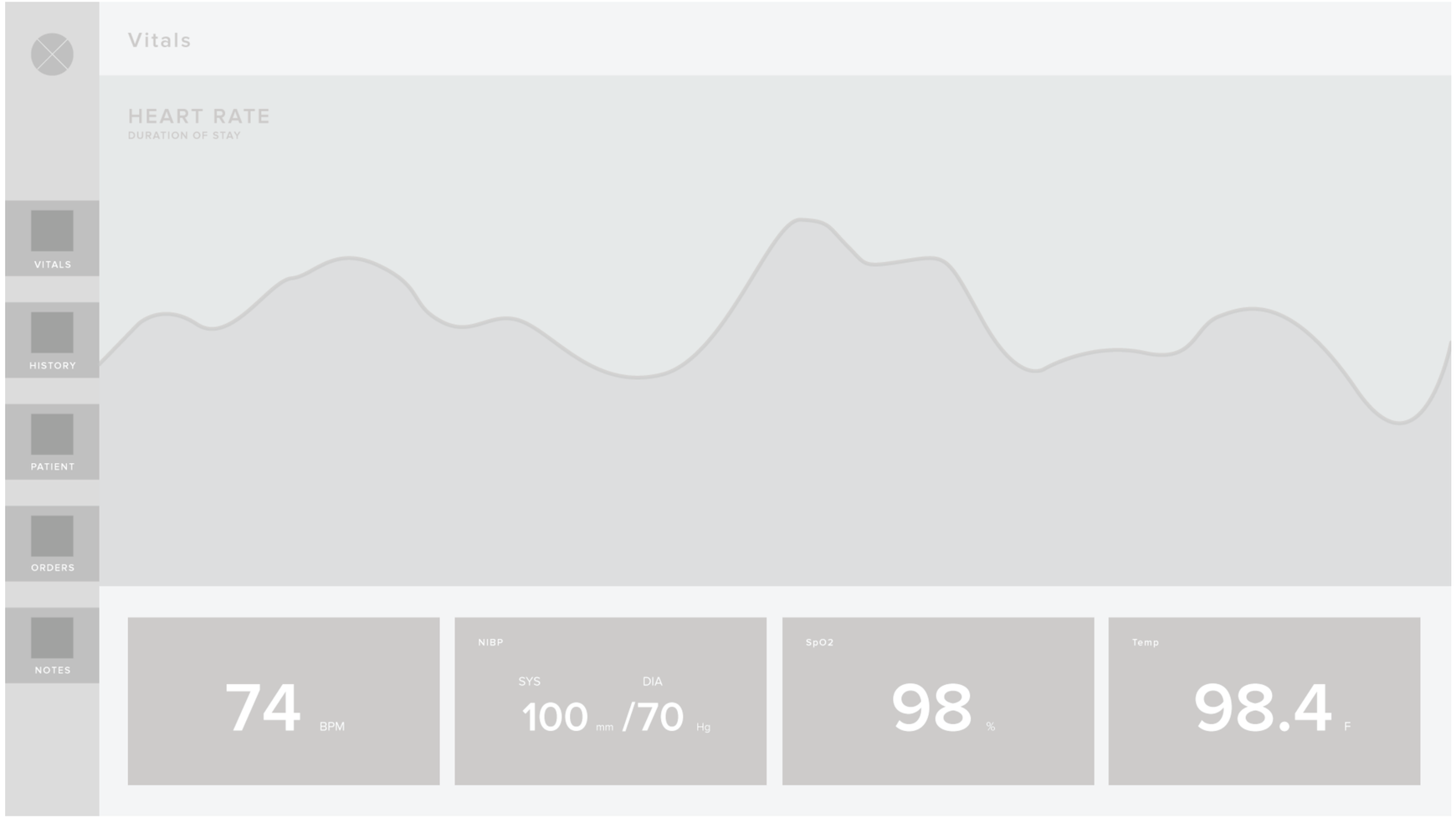
VITALS

Real Time Vitals

The doctor has access to the patients vitals in real time without being in the room as them looking at the machine.

Charts

MedGlass tracks the patients vitals information over the entire course of their stay. This helps them to see patterns in heart rate, and monitor body temp and blood pressure.

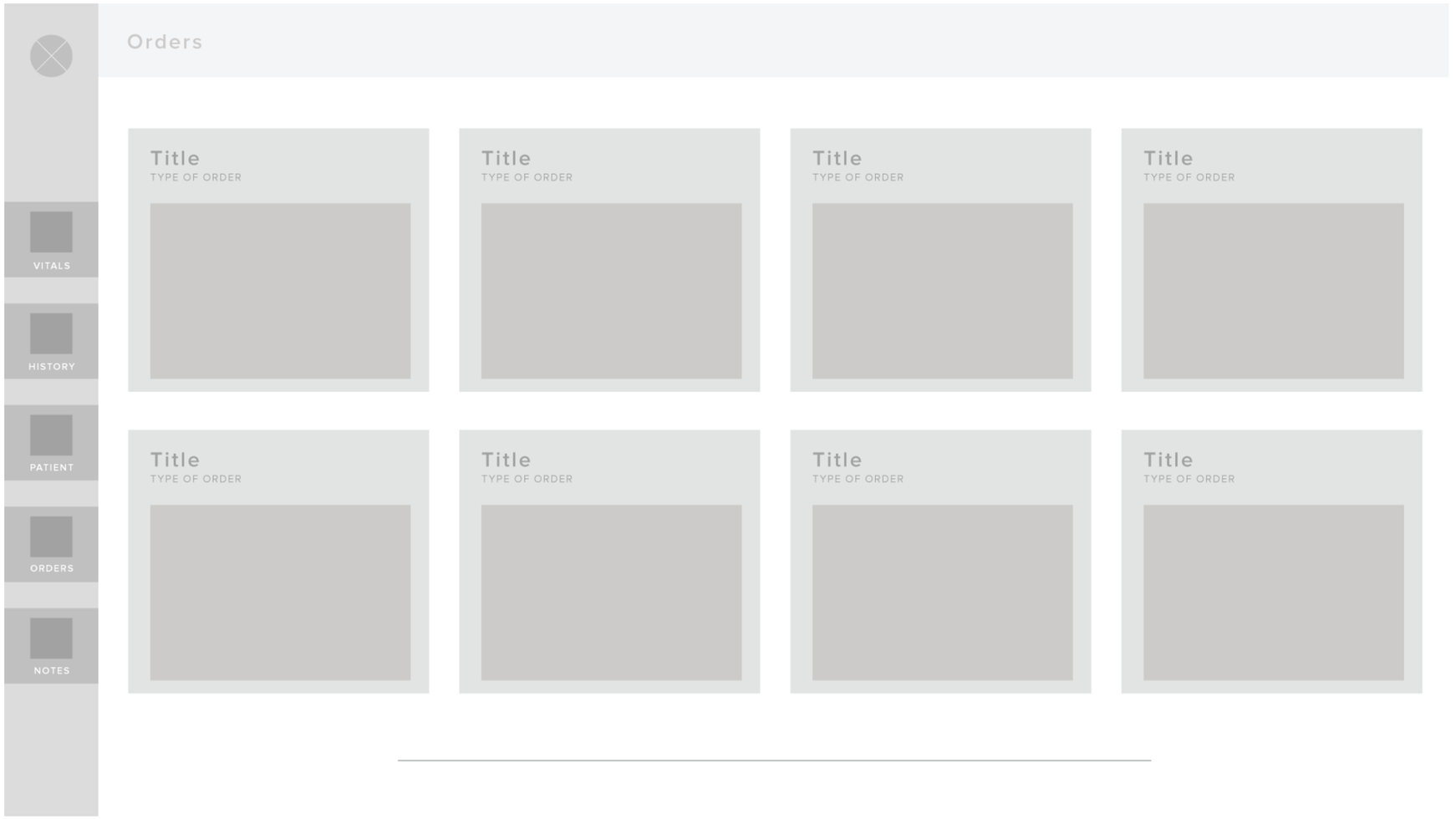


WIREFRAMES

ORDERS

Orders

The doctor can access any order ever called on the patient. They can be sorted by date, physician, clinical indication, or searched.



WIREFRAMES

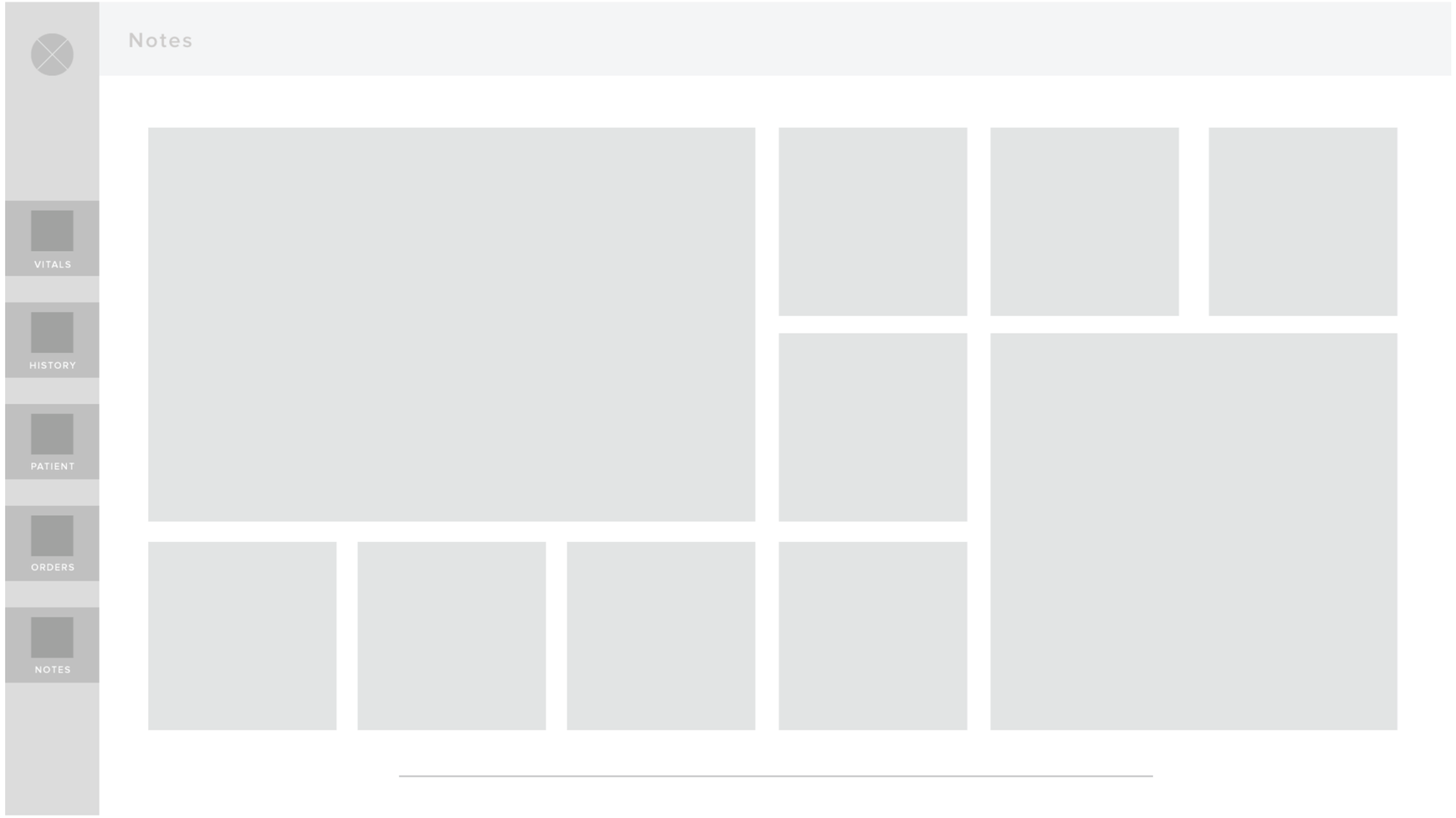
NOTES

Notes

Every trip to see the doctor warrants some sort of record being taken about the visit. The notes section is a portal where every note about every doctor's visit the patient has ever had is available to the doctor.

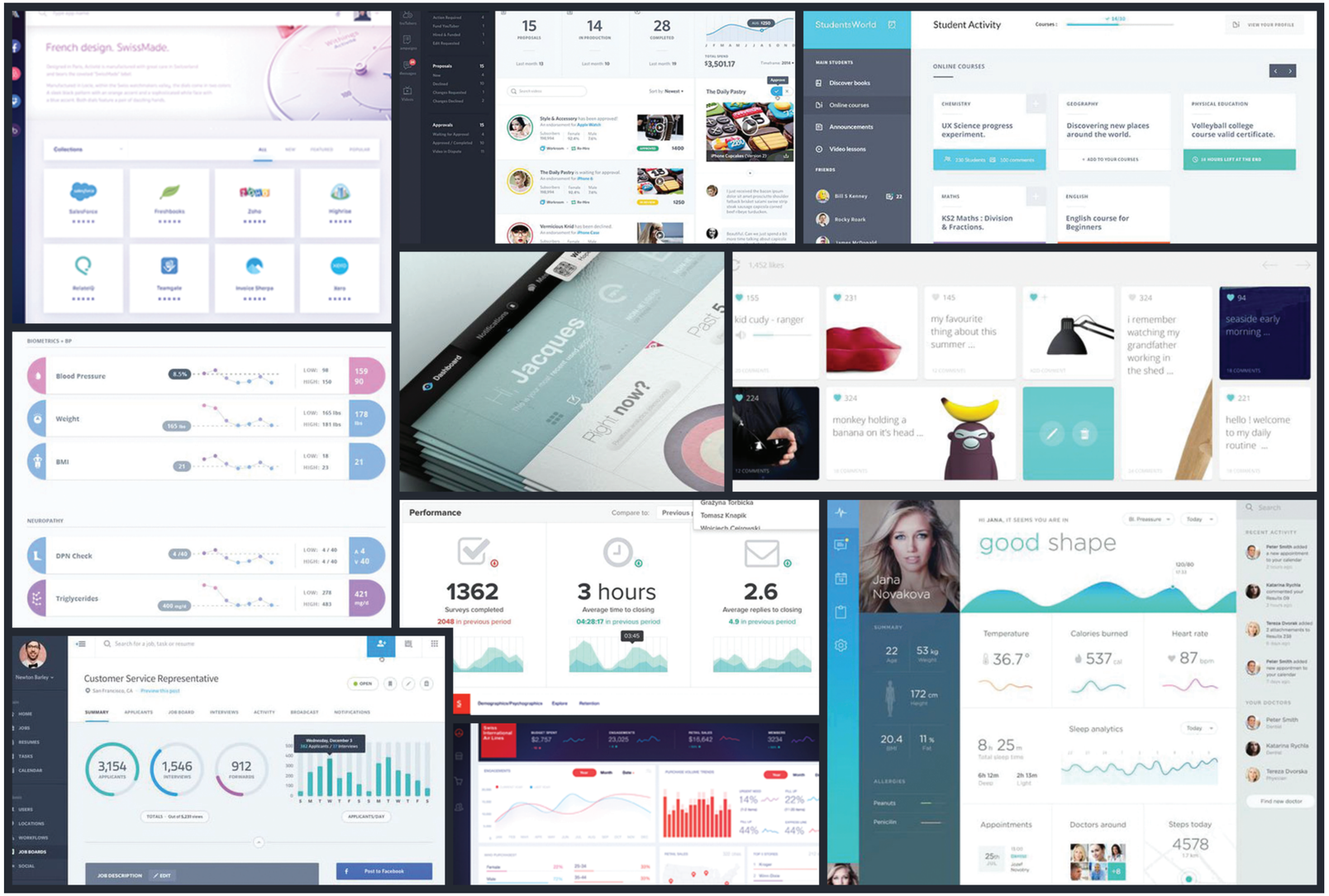
Recording

When writing a new note, the doctor can choose to have MedGlass record their conversation with their patient. This allows the database to look over all symptoms and perhaps catch something the doctor may have missed in their evaluation.



VISUAL DESIGN

INSPIRATION

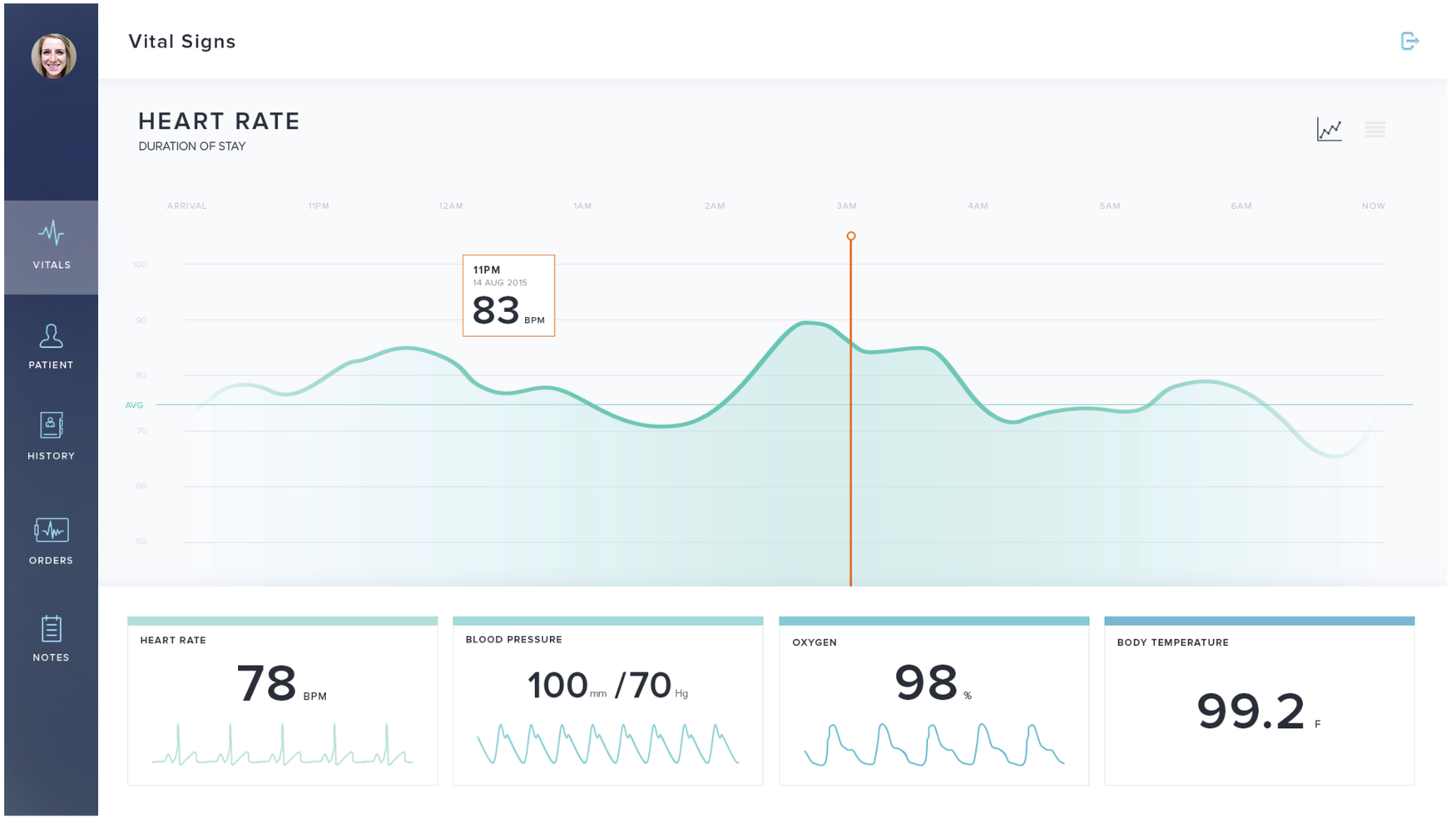


VISUAL COMPS

SPLASH SCREEN

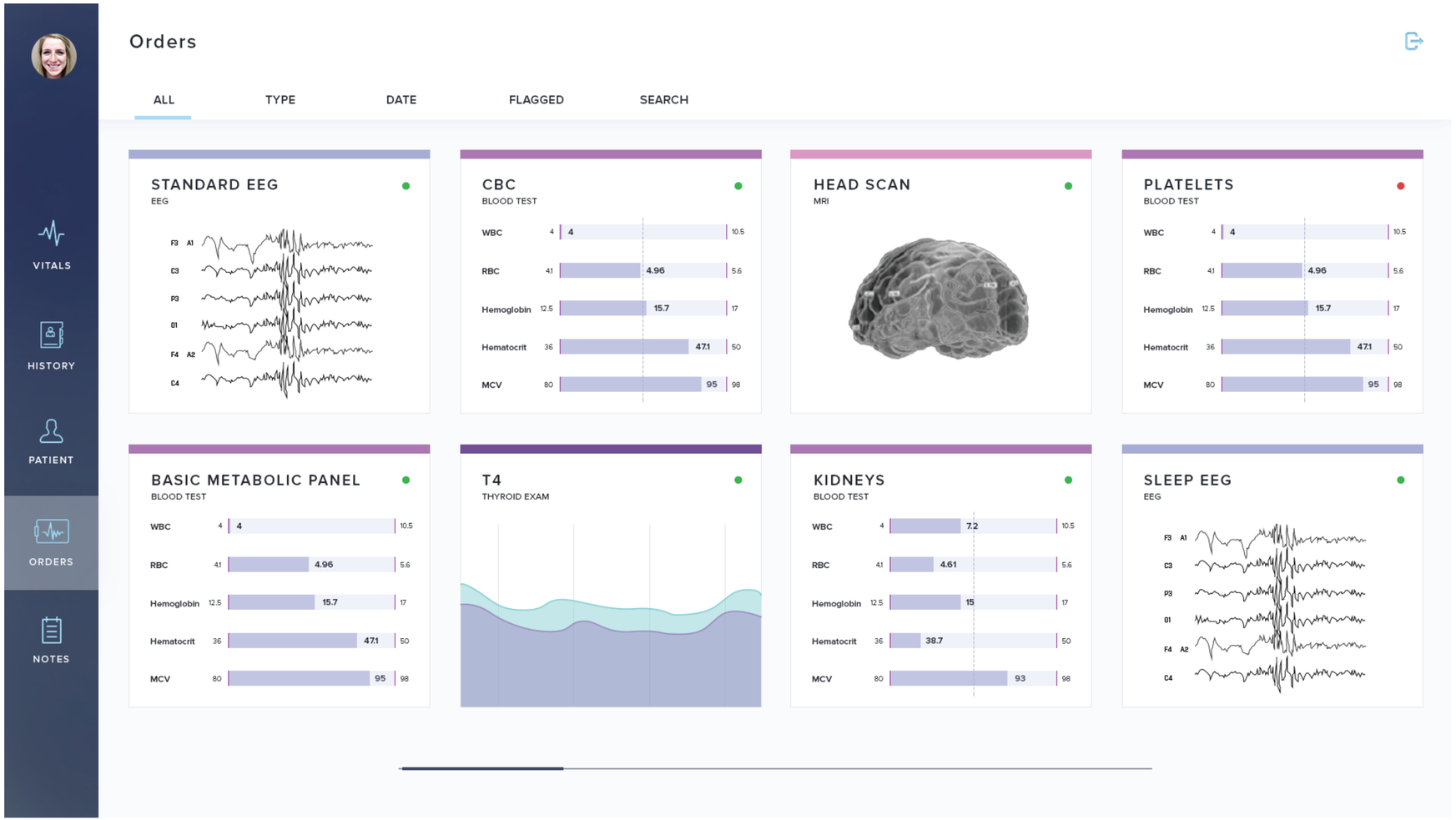
VISUAL COMPS

VITALS



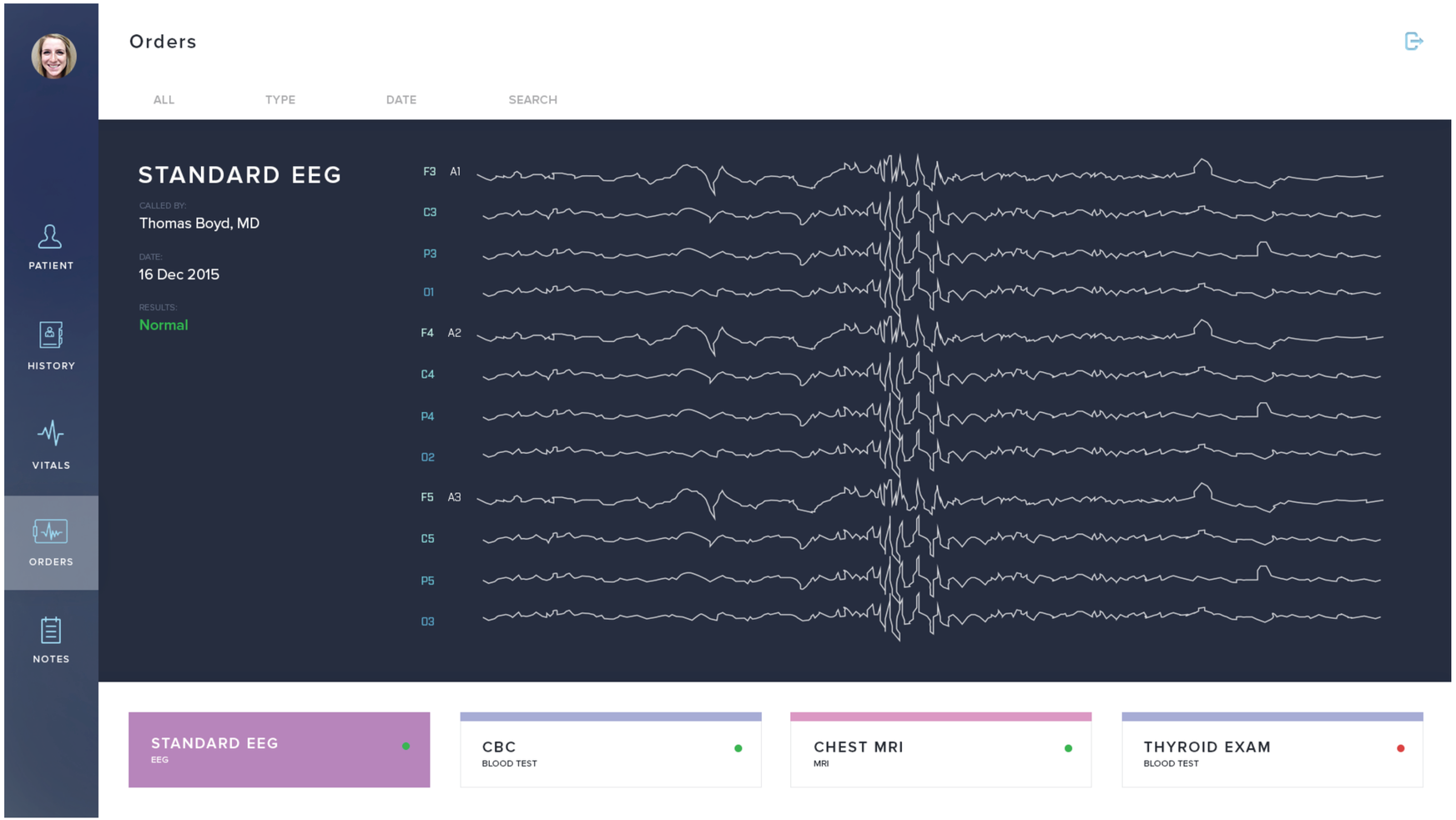
VISUAL COMPS

ORDERS



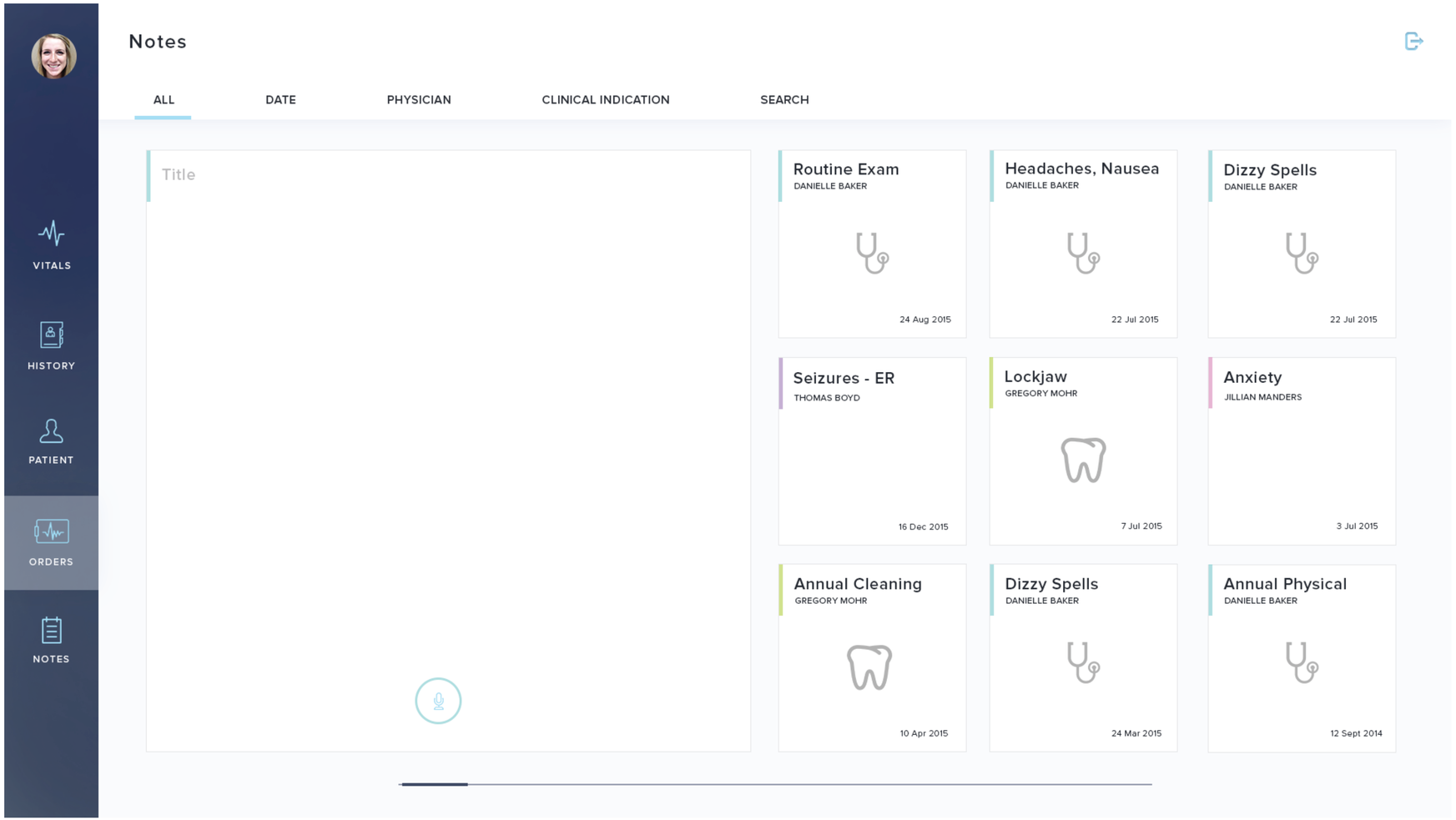
VISUAL COMPS

ORDERS - SELECTED VIEW



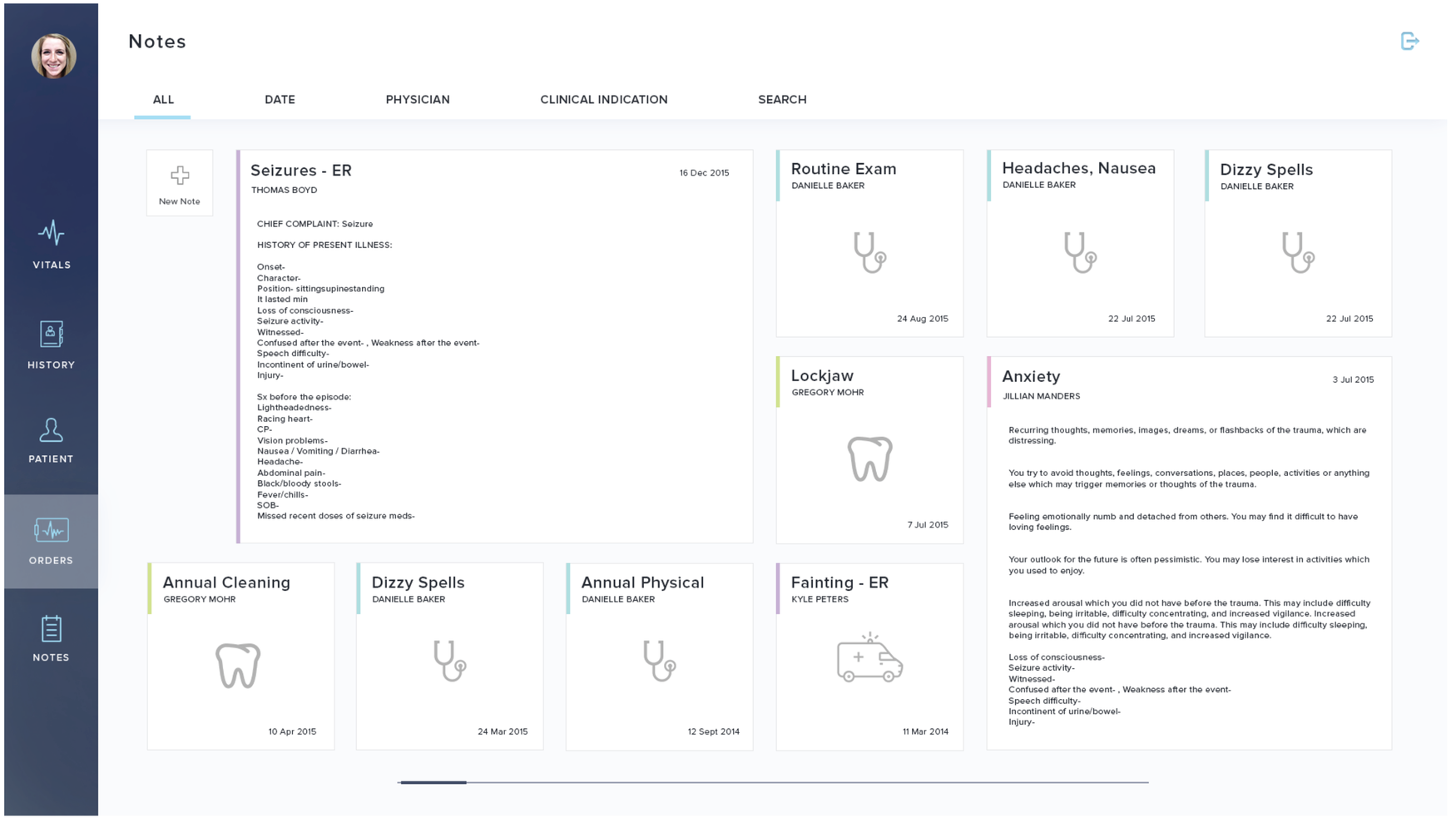
VISUAL COMPS

NOTES



VISUAL COMPS

NOTES



MedGlass

THANK YOU!

Courtney Boire | Interactive IV

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