Introducing

Fraser Health Hackathon 2017 **January 22, 2017**

Team Ambu*Link*:

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Stephen Smith

Ambulink

- Addresses a number of BC Emergency Health Services strategic goals, such as improved inclusion of paramedics in the overall patient care process

Current state For Ambulance and Pre-hospital Care

- Inefficient processes
- Paper-based tools
- Minimal access to medical records

Ambulink

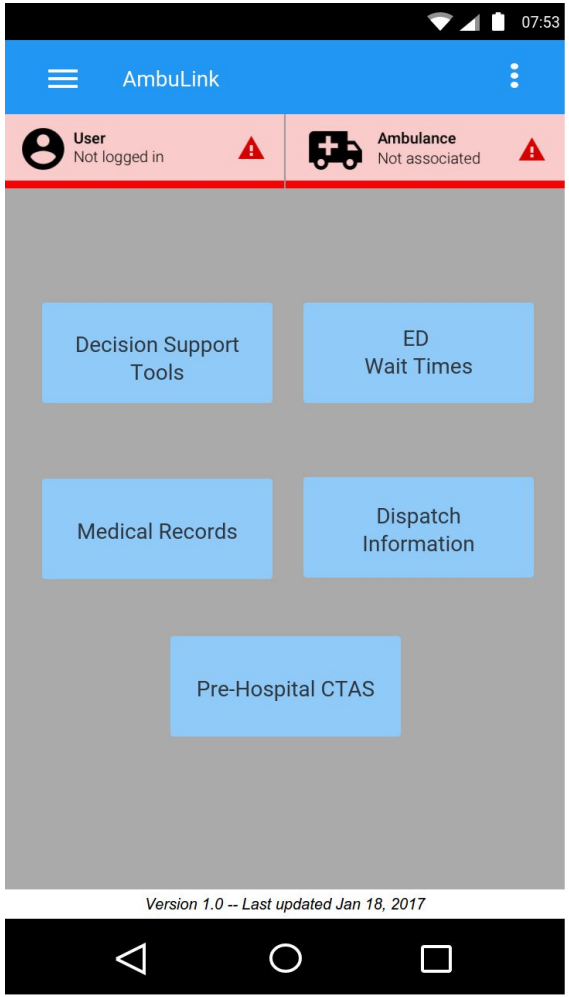
Ambulink Application

- Used by ambulance crews, air and terrestrial
- Practical blend of reliable, cost-effective, trusted technologies
- Platform-agnostic, portable to Android, iOS and other operating systems
- Utilizes cellular data network available throughout Canada
- Flexible and scalable

Ambulink

Goals:

- Provide a mechanism and tools to improve the role of paramedics in the overall care process
- Standardized processes for paramedics
- Improve patient outcomes by jumpstarting the care process
- Shifting focus from patient transport to patient-centred care
- Alignment with health systems

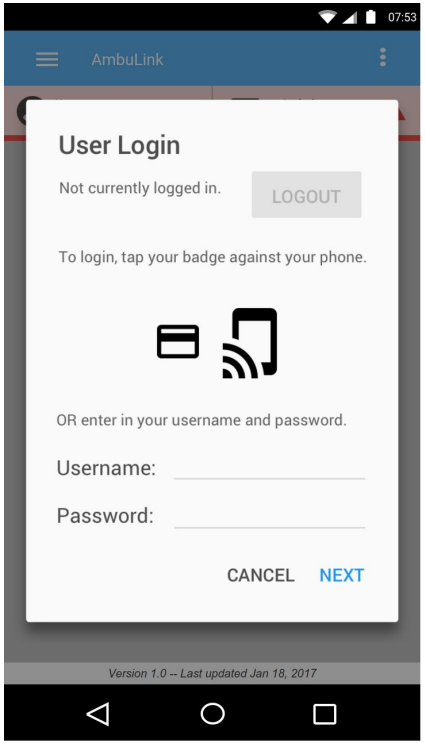


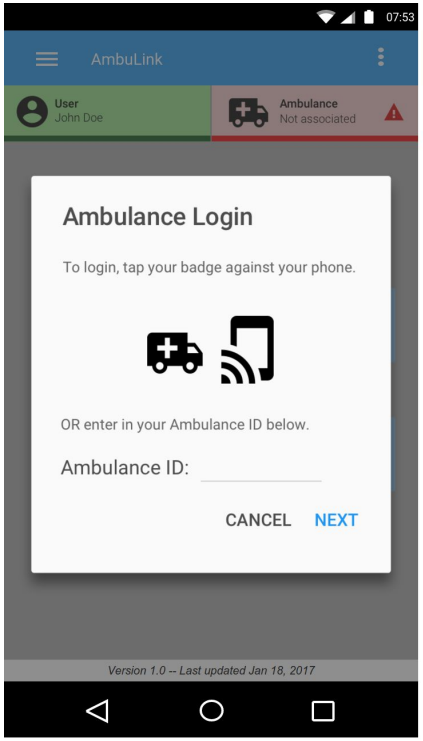
Ambulink

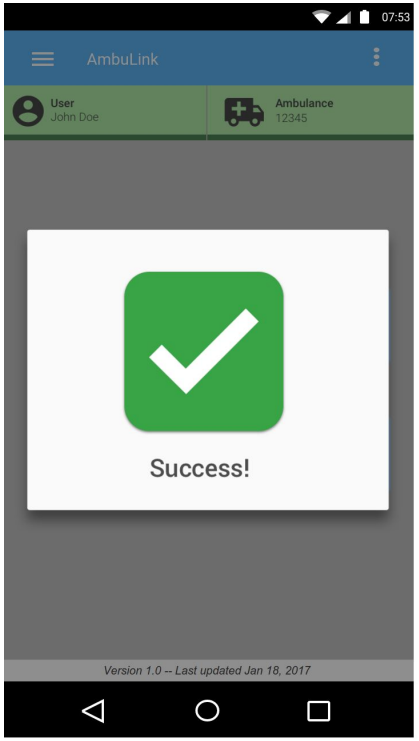
Patient-centered support tools for ambulance crews (both air and terrestrial)

- Best practice decision support tools
- Real-time driving and emergency dept wait times
- Medical records integration
- Real-time link to dispatch (E-Comm) and EDs
- Pre-hospital Canadian Triage Acuity Scale (CTAS) score calculator
    - Feeds emergency dept dashboards

Ambulink



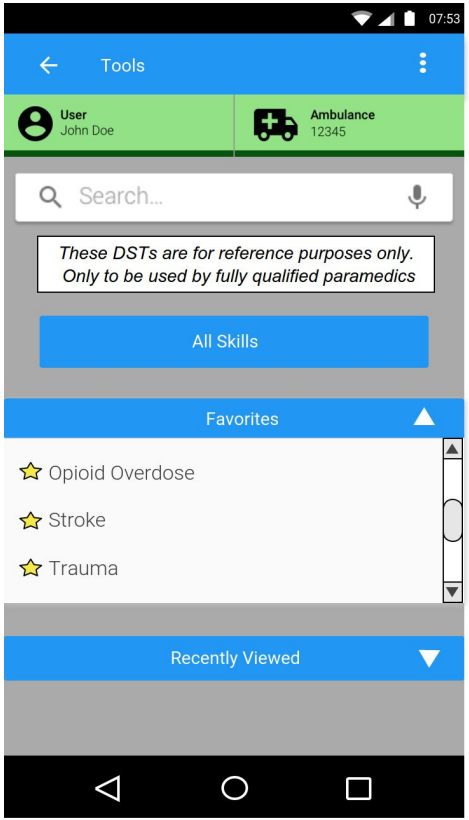


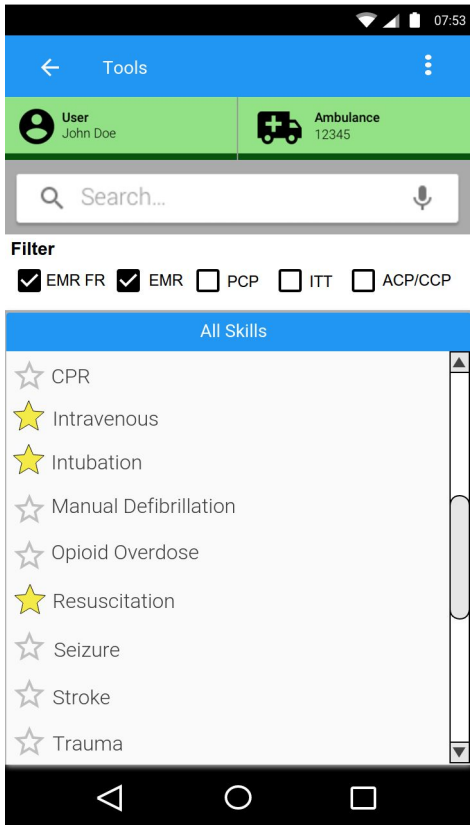


Authentication and association is simple:

- Tap to log in via NFC
- Ambulance and User logins available

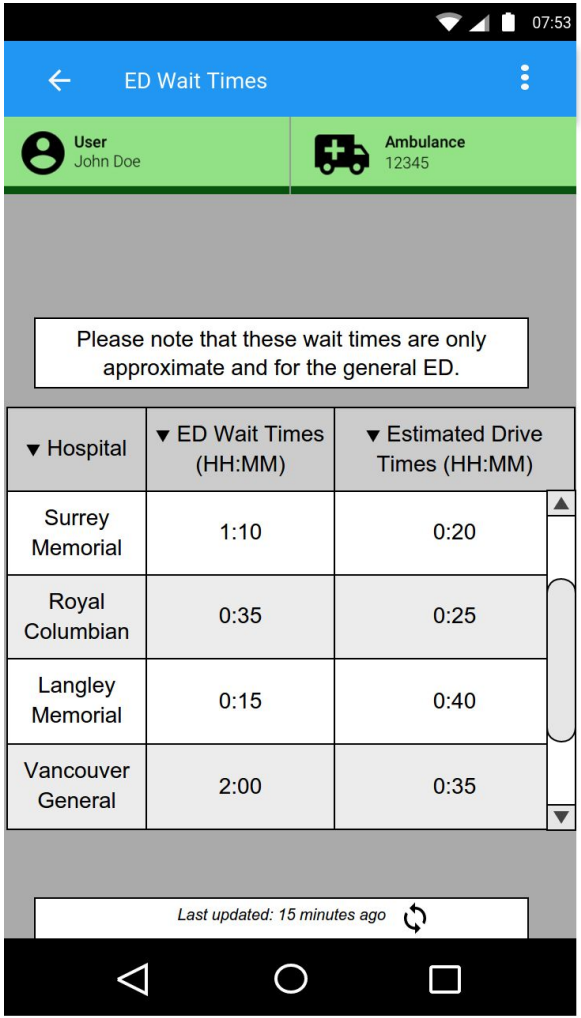
Ambulink





Decision Support Tools:

- Guided tools and workflows to assist paramedics
- Provides standard references for paramedics to view and use

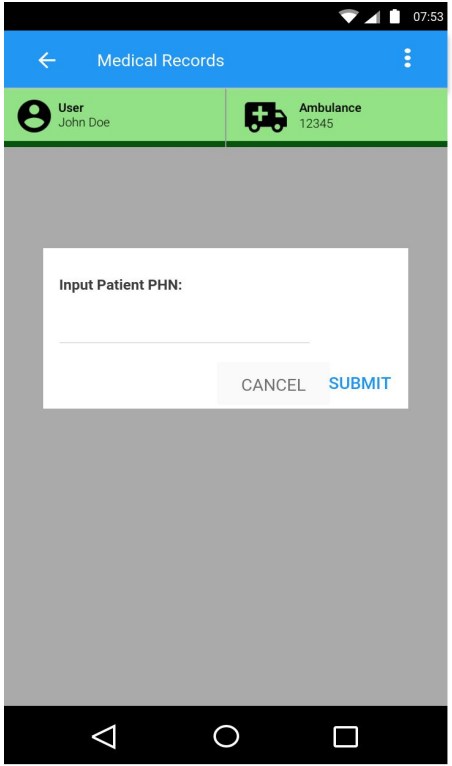


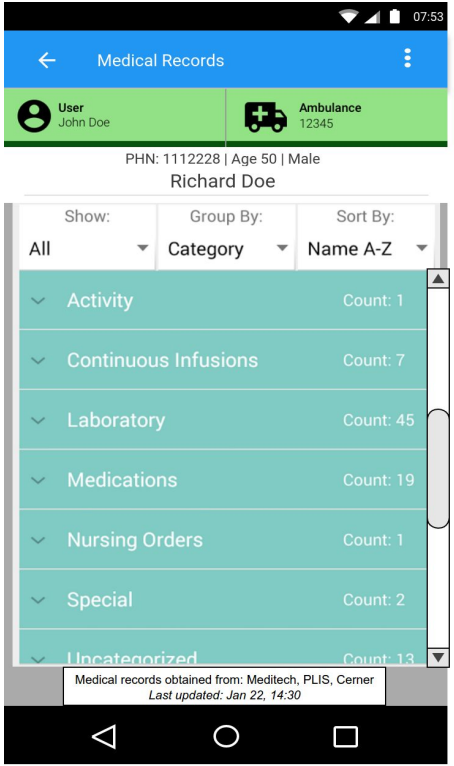
Ambulink

ED Wait Times:

- Wait times for all ED departments
- Includes drive times to each ED
- Includes all hospitals, regardless of HA

Ambulink

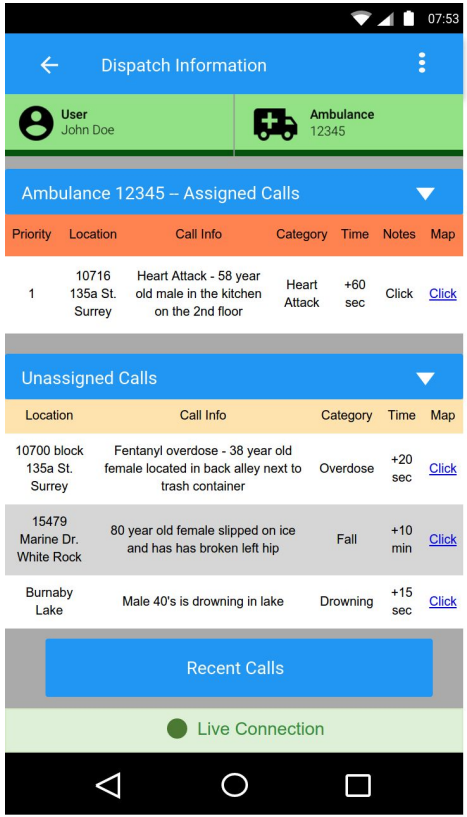


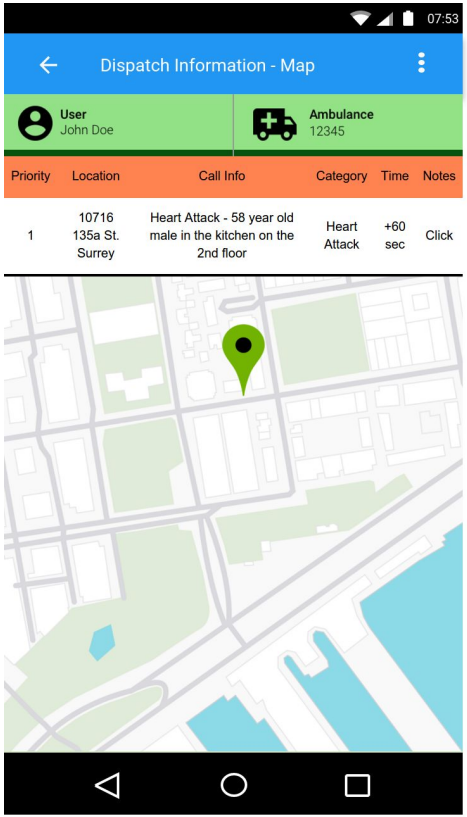


Medical Records

- Unified Medical Records, pulled in from all interfaced systems (Meditech, Cerner, PLIS, PARIS,etc.)
- Ideally also include GP medical record systems.

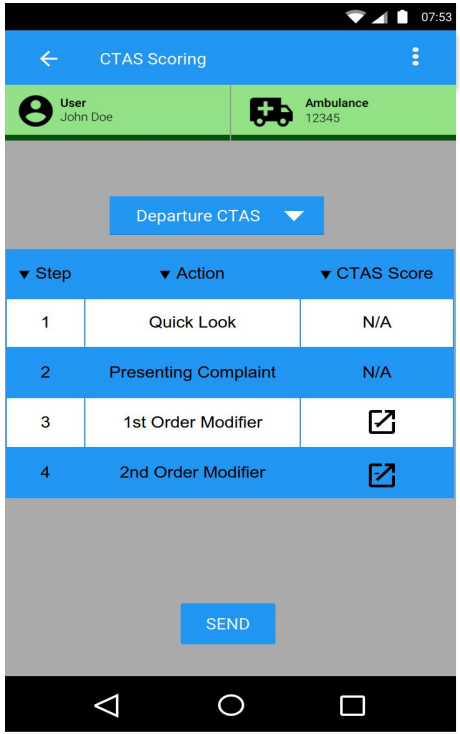
Ambulink

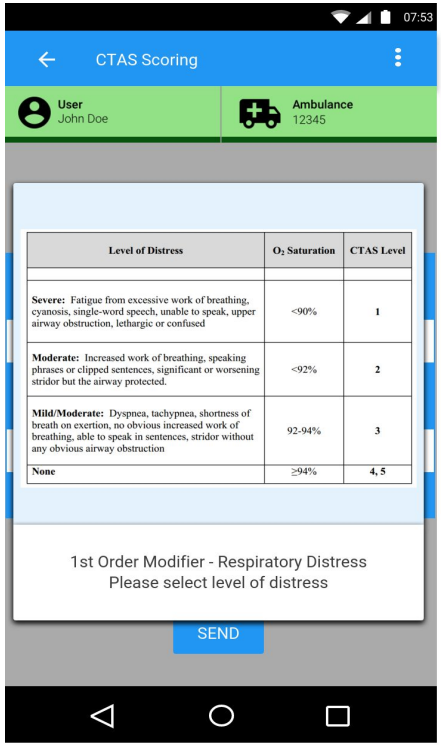


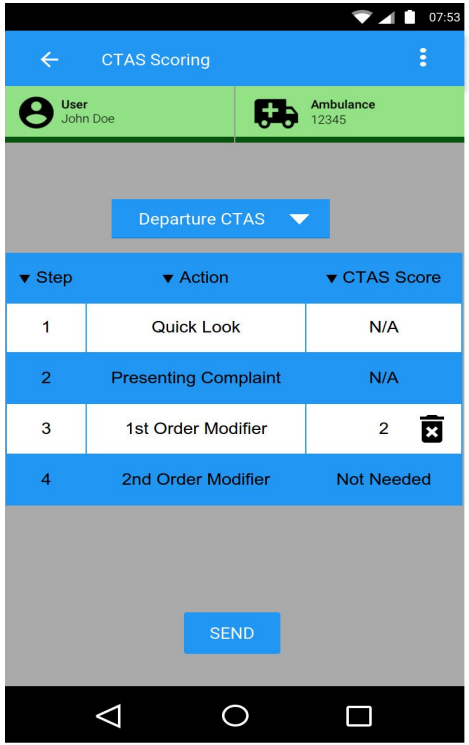


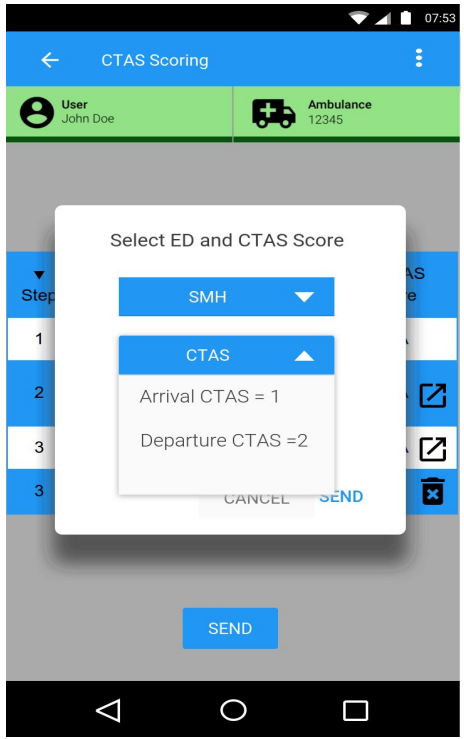
Dispatch Information:

- Provides key dispatch information, such as specific location information.
- Links to map which can provide GPS directions



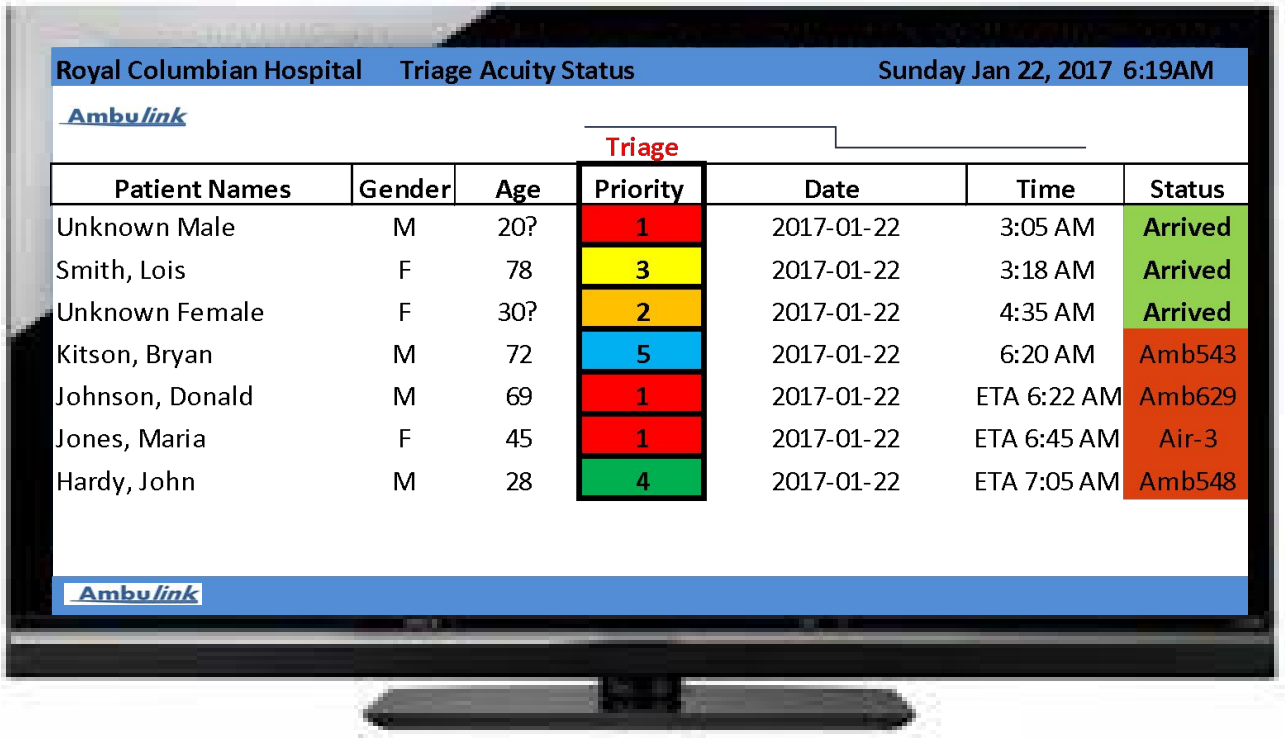






Canadian Triage Acuity Scale (CTAS):

- Ability to input Arrival and Departure CTAS scores (along with any additional scores)
- Built-in 1st and 2nd order modifiers
- Ability to select ED and CTAS score



Receiving Emergency Department Dashboard

Ambulink

Data required for Ambulink:

- ED Wait Times
- Medical Records Interface
- Decision Support Trees
- CTAS Scoring modifiers

Challenges Moving Forward:

- Interface with all discrete Medical Record systems, from all HAs, and all systems (including GP systems)
- Obtaining and processing all the data from different HAs

Ambulink

Long Term:

- Since this application is platform agnostic and has the ability to interface with downstream systems, there is potential to interface with any system
- Can be customized with organizational specific tools and functions

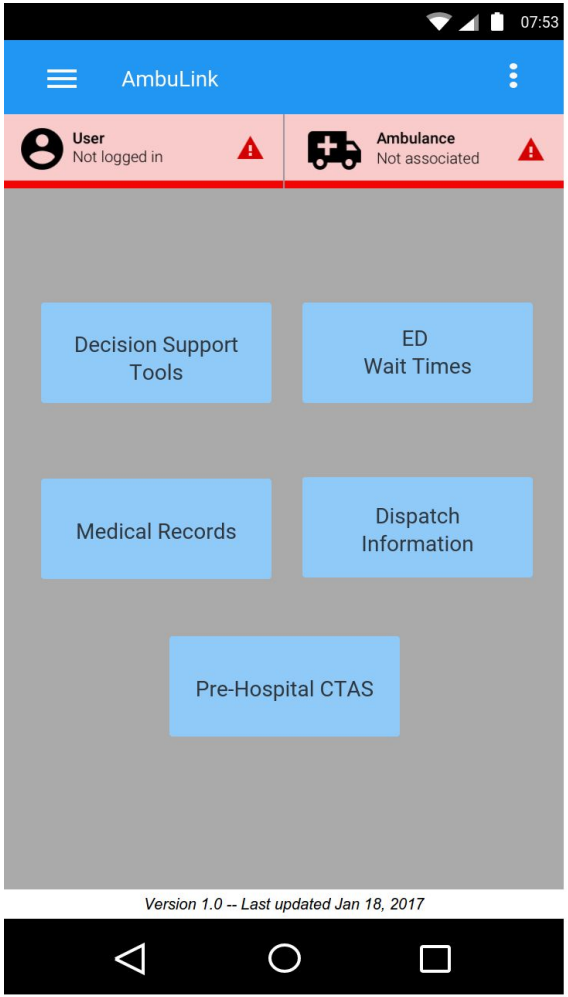
Ambulink

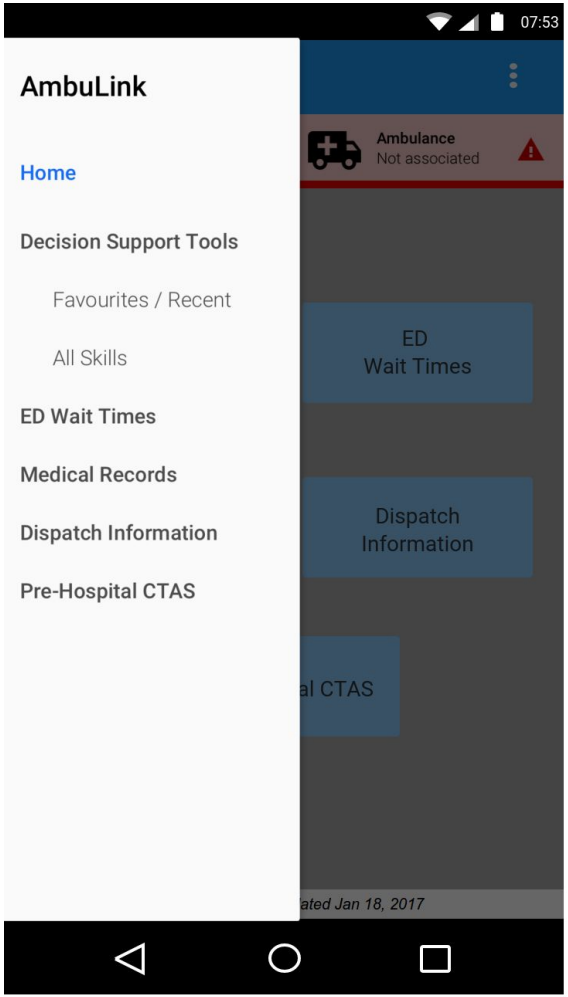
Q and A

Ambulink

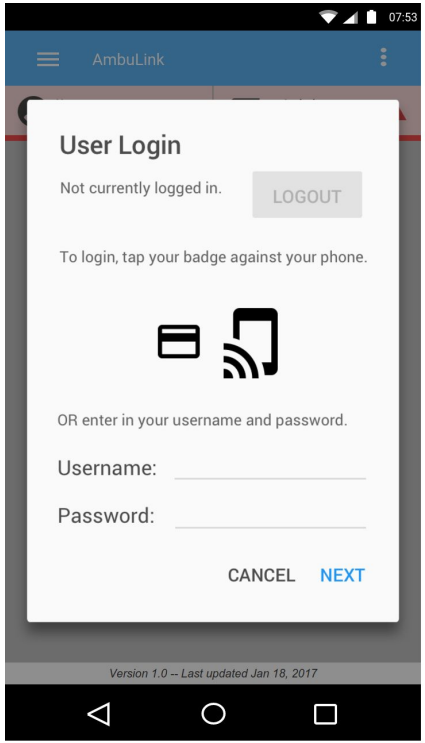
Appendix - Prototype Screenshots

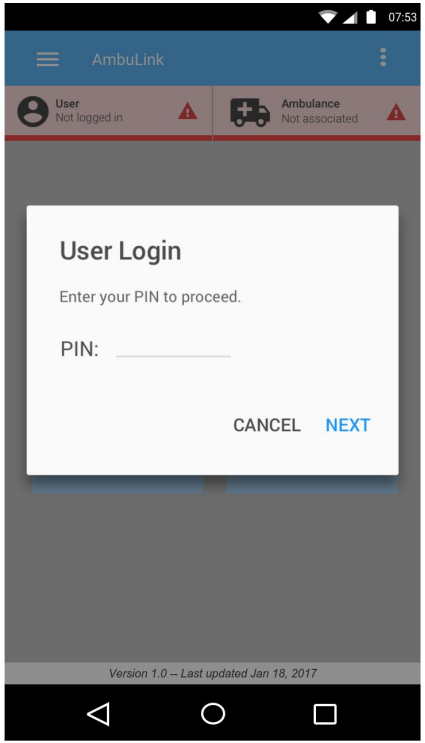
Home Screen

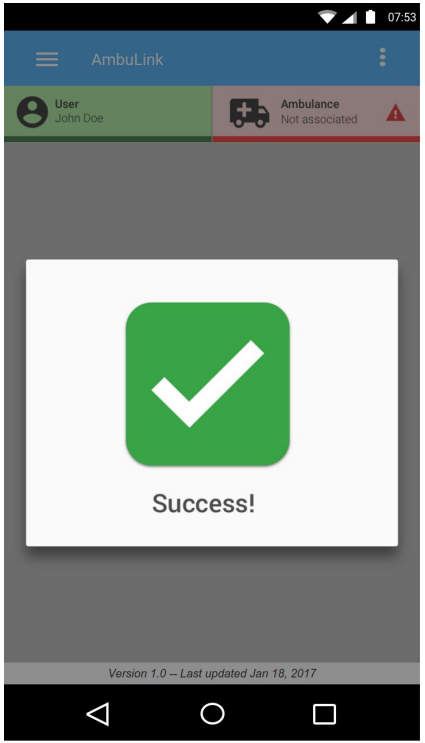

07:53
AmbuLink
User
Not logged in
Ambulance
Not associated
Decision Support Tools
ED Wait Times
Medical Records
Dispatch Information
Pre-Hospital CTAS
Version 1.0 -- Last updated Jan 18, 2017

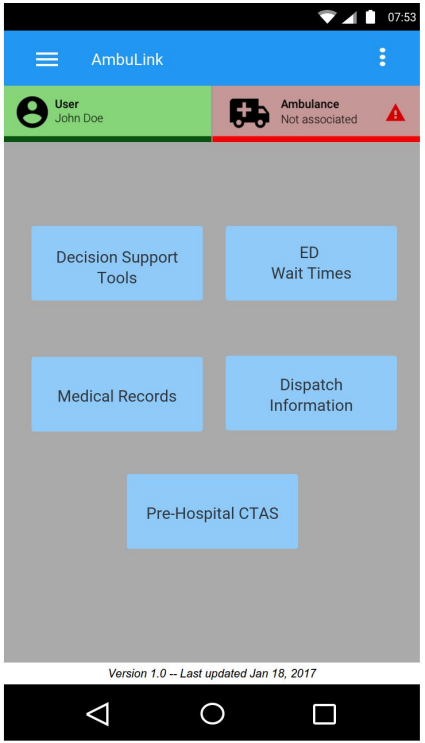

07:53
AmbuLink
Home
Decision Support Tools
Favourites / Recent
All Skills
ED Wait Times
Medical Records
Dispatch Information
Pre-Hospital CTAS
Ambulance
Not associated
ED Wait Times
Dispatch Information
al CTAS
ated Jan 18, 2017

User Login

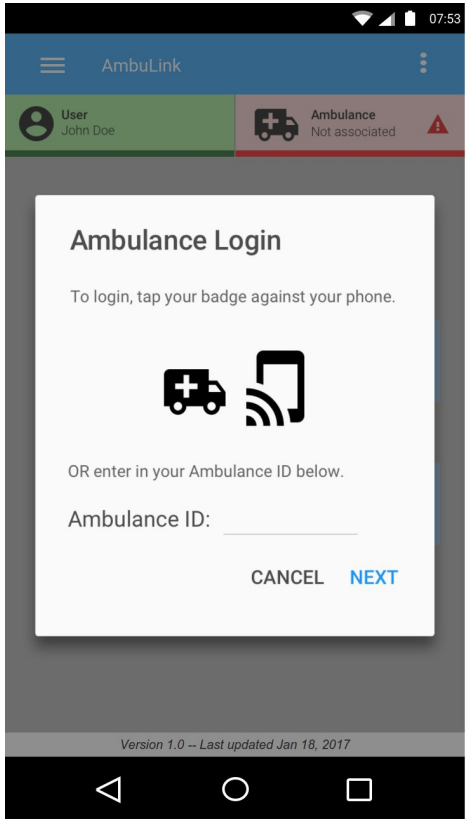

07:53
AmbuLink
User Login
Not currently logged in.
LOGOUT
To login, tap your badge against your phone.
OR enter in your username and password.
Username:
Password:
CANCEL
NEXT
Version 1.0 -- Last updated Jan 18, 2017

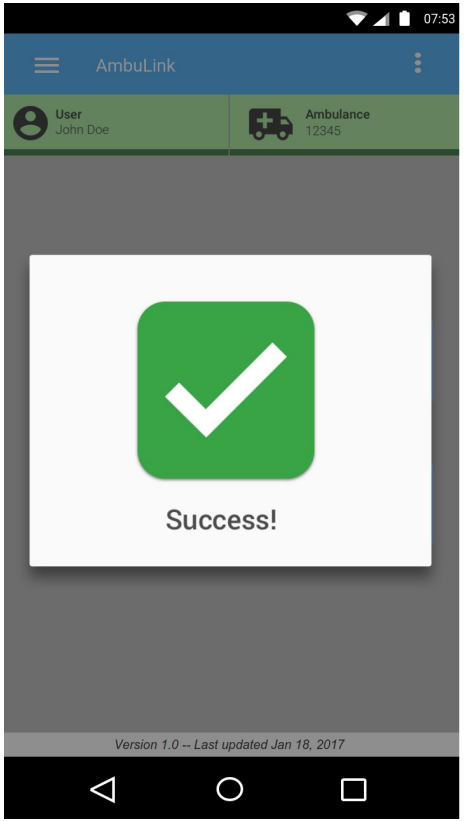

07:53
AmbuLink
User
Not logged in
Ambulance
Not associated
User Login
Enter your PIN to proceed.
PIN:
CANCEL
NEXT
Version 1.0 -- Last updated Jan 18, 2017

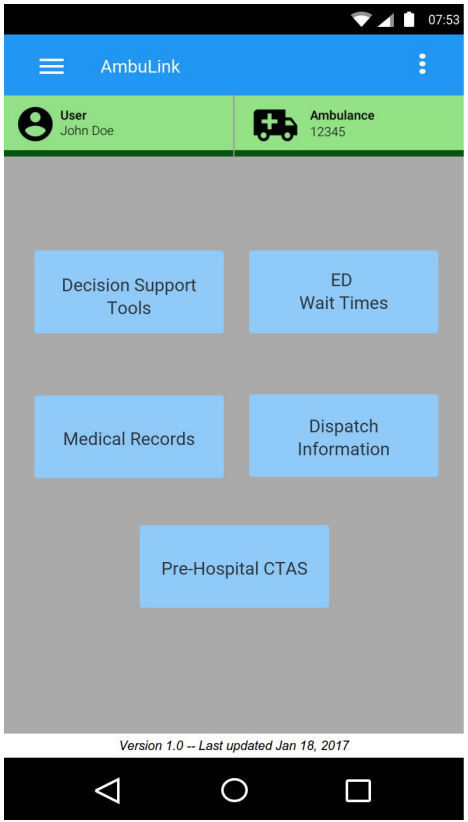

07:53
AmbuLink
User
John Doe
Ambulance
Not associated
Success!
Version 1.0 -- Last updated Jan 18, 2017


07:53
AmbuLink
User
John Doe
Ambulance
Not associated
Decision Support Tools
ED Wait Times
Medical Records
Dispatch Information
Pre-Hospital CTAS
Version 1.0 -- Last updated Jan 18, 2017

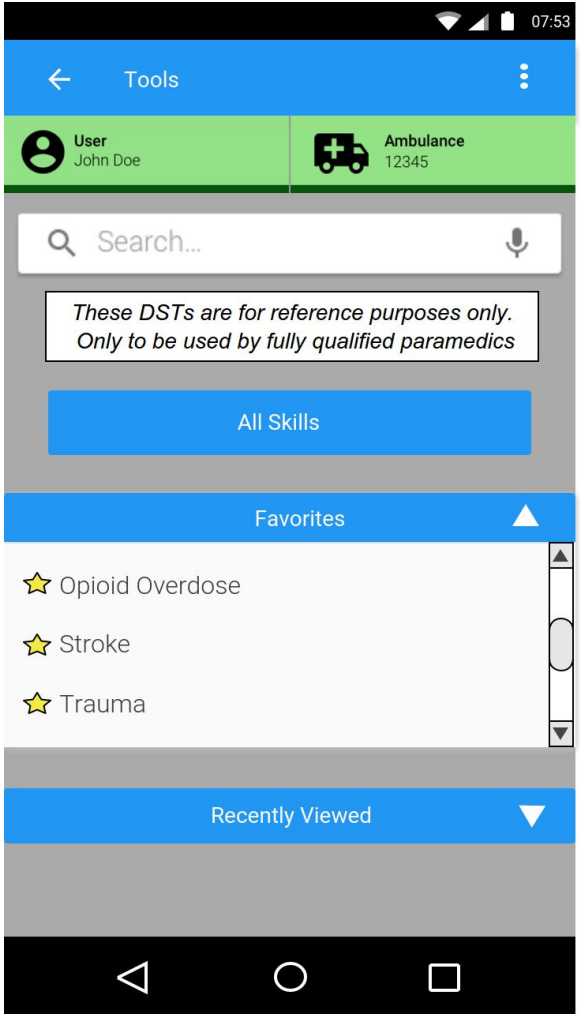
Ambulance Login

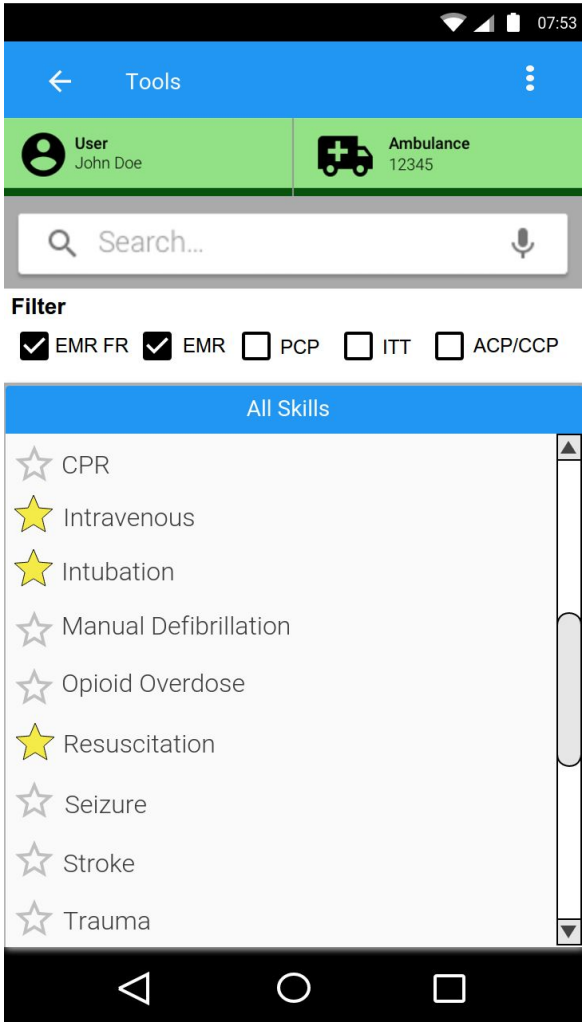






Decision Support Tools





07:53

Tools

User
John Doe

Ambulance
12345

Opioid Overdose DST
Start by selecting choice below:

Respiratory Rate (RR) <10-12/min
Oxygen Saturation <90% on Room Air

Respiratory Rate (RR) >10-12/min
Oxygen Saturation <90% on Room Air

07:53

Tools

User
John Doe

Ambulance
12345

Respiratory Rate (RR) <10-12/min
Oxygen Saturation <90% on Room Air

Stimulate
Try to rouse individual
Call their name
Do a sternal rub

Airway
Individual is minimally responsive → nonresponsive and **UNABLE** to protect airway
(if you need to leave the individual, place in recovery position)
Secure airway; check mouth, remove obstructions, tilt head back

Ventilate
Provide supplemental oxygen with assisted ventilation (bag-valve-mask) if available
OR
Provide rescue breathing (mouth to mask) 1 breath/ 5-6 seconds

Evaluate
Is the individual breathing? Do they have a pulse?
If **NOT** breathing and **NO** pulse, commence CPR (cycles of 30 chest compressions, 2 breaths**)
If **NOT** breathing and **HAS** pulse, continue rescue breathing (1 breath every 5-6 seconds)

Medication
Administer naloxone 0.4 mg IM

Evaluate
Protect airway. Is the individual breathing? Do they have a pulse? Continue with rescue breathing +/- chest compressions until breathes on own or EMS arrives
If remains minimally responsive →nonresponsive and **UNABLE** to protect airway after 3-5 minutes following previous naloxone dose, administer 0.4 mg naloxone
Continue to evaluate and administer naloxone as needed

07:53

Tools

User
John Doe

Ambulance
12345

Respiratory Rate (RR) >10-12/min
Oxygen Saturation <90% on Room Air

Respiratory Rate (RR) > 10-12/min
Oxygen Saturation > 90% on Room Air*

↓

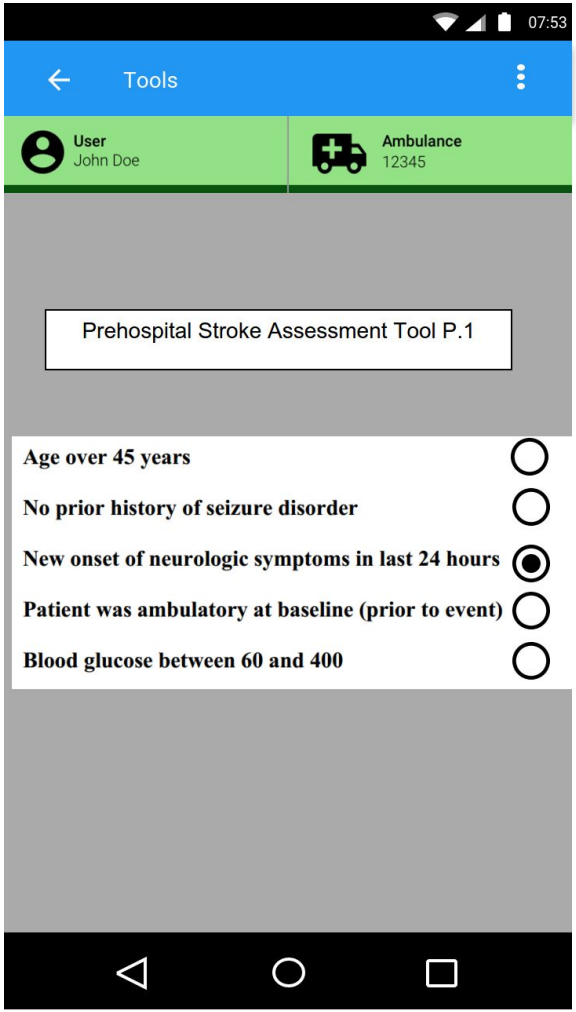
Individual is minimally responsive →responsive and **ABLE** to protect airway

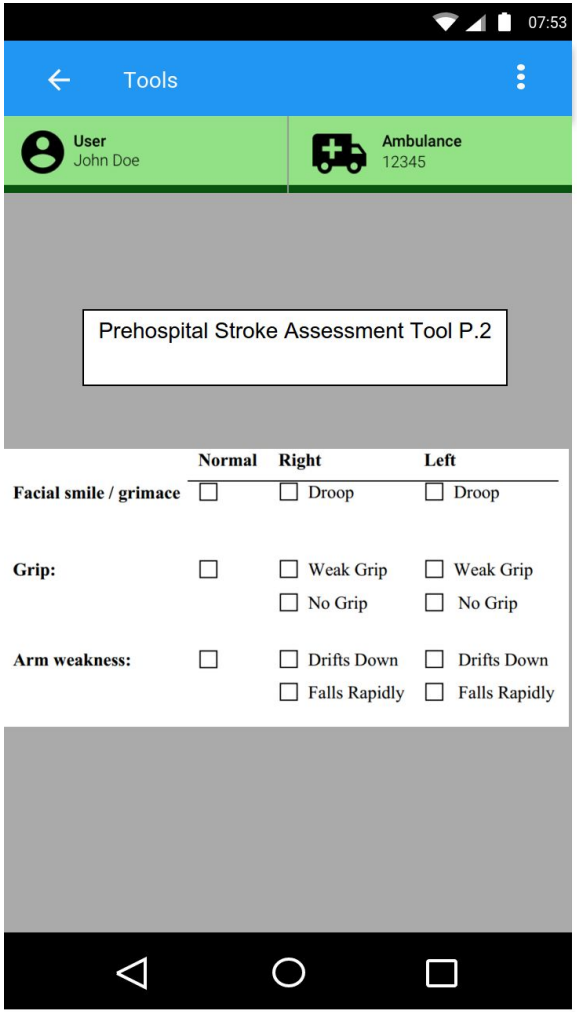
↓

Observe according to Organization policy

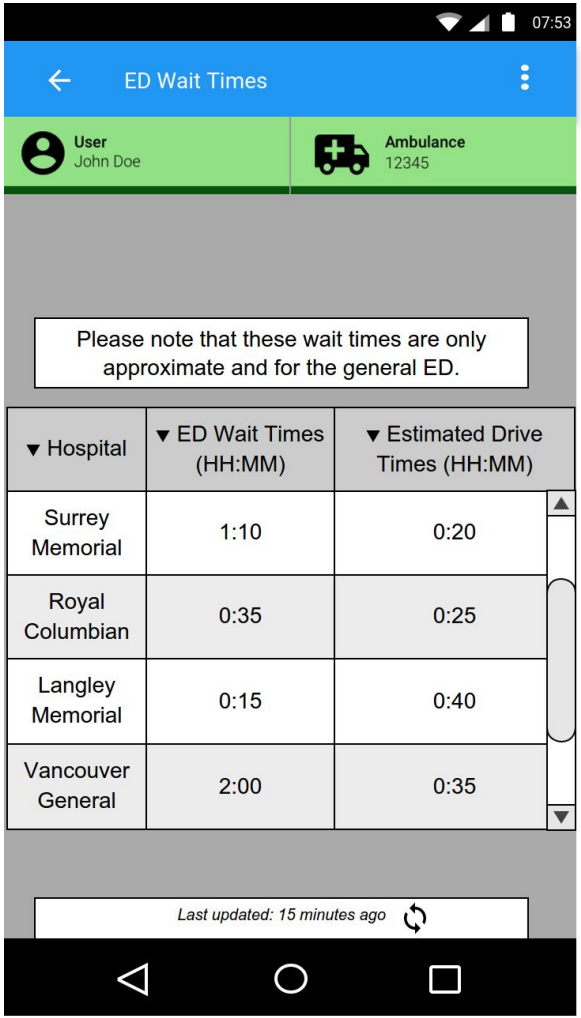
↓

If no improvement or RR and/ or mental status worsen, proceed to SAVEME protocol

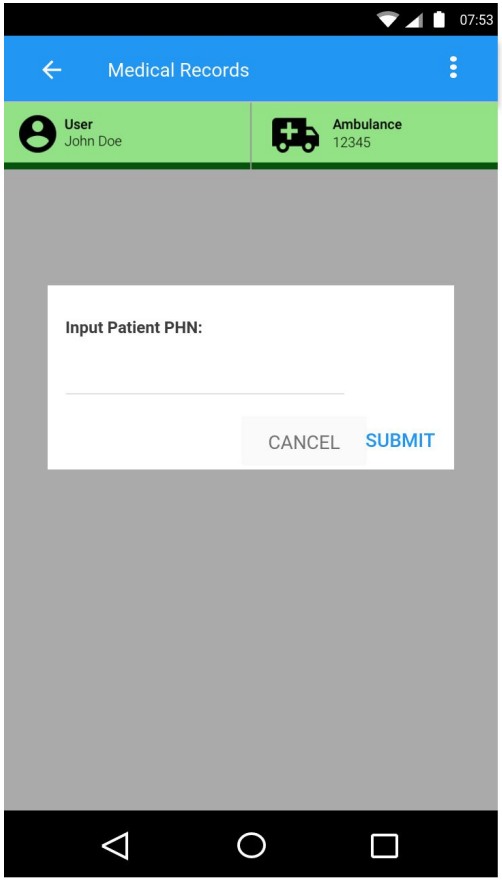

07:53
Tools
User
John Doe
Ambulance
12345
Prehospital Stroke Assessment Tool P.1
Age over 45 years
No prior history of seizure disorder
New onset of neurologic symptoms in last 24 hours
Patient was ambulatory at baseline (prior to event)
Blood glucose between 60 and 400

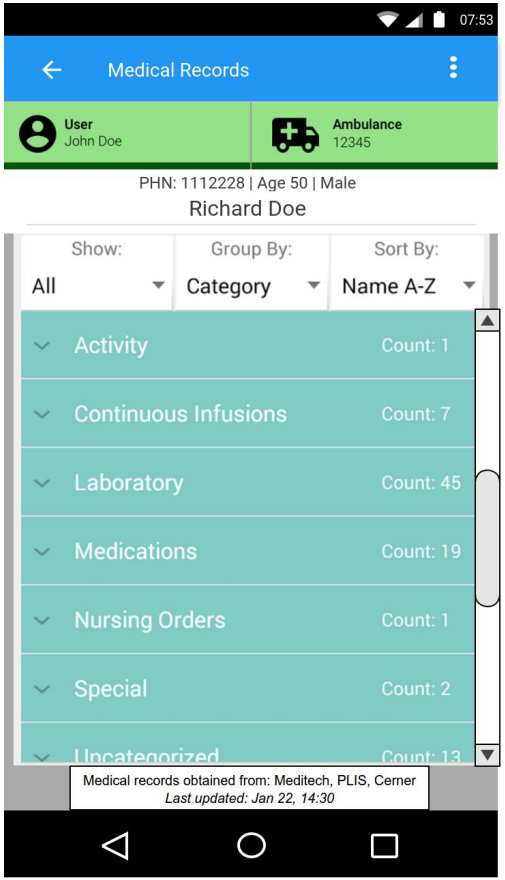

07:53
Tools
User
John Doe
Ambulance
12345
Prehospital Stroke Assessment Tool P.2
Normal
Right
Left
Facial smile / grimace
Droop
Droop
Grip:
Weak Grip
Weak Grip
No Grip
No Grip
Arm weakness:
Drifts Down
Drifts Down
Falls Rapidly
Falls Rapidly

ED Wait Times

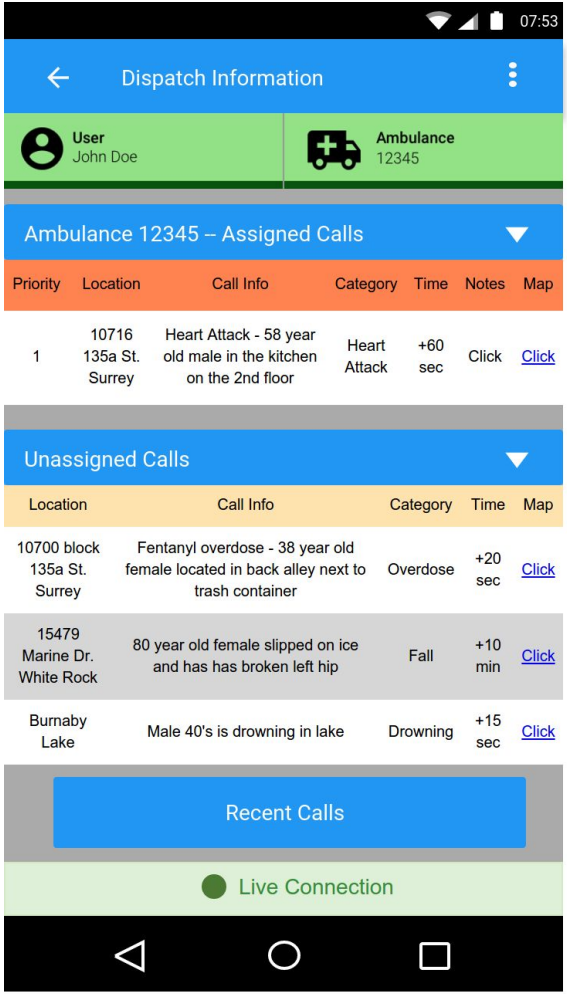


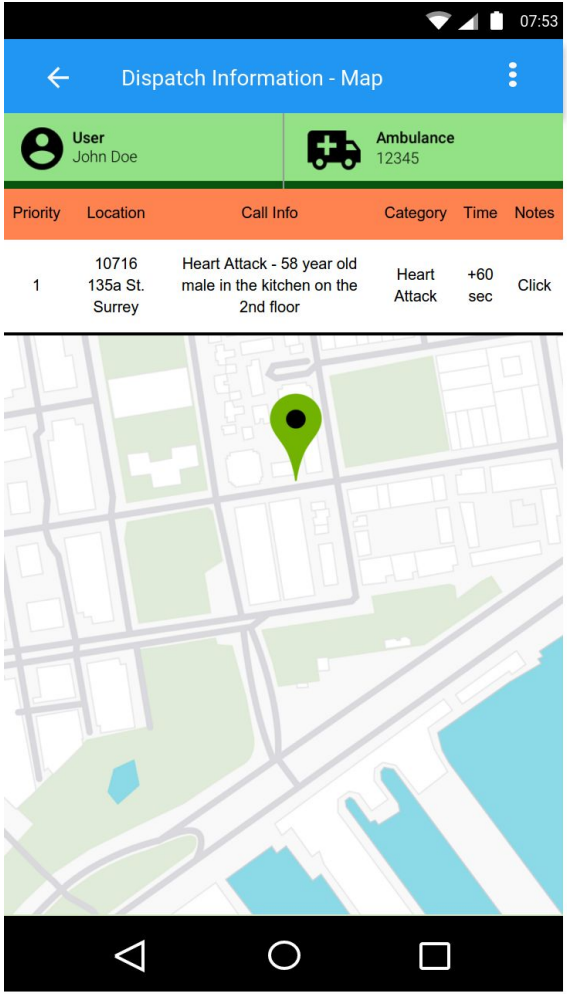
Medical Records





Dispatch


07:53
Dispatch Information
User
John Doe
Ambulance
12345
Ambulance 12345 -- Assigned Calls
Priority
Location
Call Info
Category
Time
Notes
Map
1
10716 135a St. Surrey
Heart Attack - 58 year old male in the kitchen on the 2nd floor
Heart Attack
+60 sec
Click
Click
Unassigned Calls
Location
Call Info
Category
Time
Map
10700 block 135a St. Surrey
Fentanyl overdose - 38 year old female located in back alley next to trash container
Overdose
+20 sec
Click
15479 Marine Dr. White Rock
80 year old female slipped on ice and has has broken left hip
Fall
+10 min
Click
Burnaby Lake
Male 40's is drowning in lake
Drowning
+15 sec
Click
Recent Calls
Live Connection


07:53
Dispatch Information - Map
User
John Doe
Ambulance
12345
Priority
Location
Call Info
Category
Time
Notes
1
10716 135a St. Surrey
Heart Attack - 58 year old male in the kitchen on the 2nd floor
Heart Attack
+60 sec
Click

Pre-Hospital CTAS