



atient tracking

RIGHT



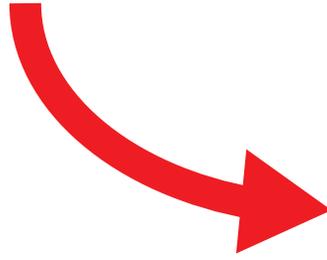
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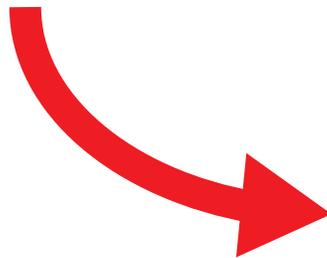
INTRODUCTION

TEAM



Initially presented with this problem during the RIT & RGH Idea lab, our team has continued to work to develop a solution to address the problems of patient tracking and identification in the radiology department.

CHALLENGE



Develop a poka yoke, “fail safe or mistake proof”, process/device that guarantees 100% accuracy for patient identification that addresses today’s reality of near misses occurrences.



RESEARCH

method



≡

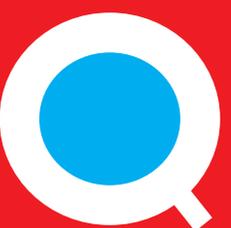
Ideation

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Interpretation

—

Discovery



Discovery

1

INTERVIEWS

Techs
Tech Assistants
Receptionists
Nurses

OBSERVED

MRI
X-RAY
CT
Ultrasound
MRI

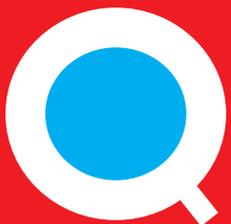


- Personnel responsible for analog Ticket To Ride (TTR)

Locating patients

Identifying patients

- Database not representative of real-time
- Patients cannot visualize their processing
- Manual data entry
- Excessive anxiety related to interpersonnel relationships and patient care

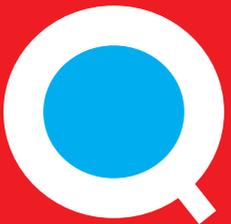


Unable to locate patient in ED*

Scenario 1



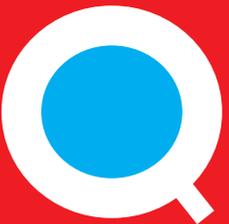
*From the time the TA receives the TTR and walks to the ED holding rooms/hallways, the patient location may have changed. This disrupts the flow of exchange, renders the TA uncertain of the patient's location, optimizes the chances of mistakes occurring, and creates inefficiencies down the line



TA Location Unknown

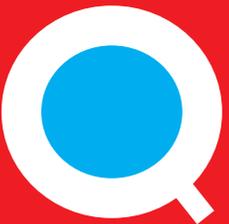
When a TA is moving a patient, their location is not known by dependent personnel.

Information--bound to change at a moment's notice--is harder to transmit to TA from their respective imaging center, and vice versa.



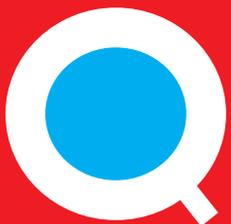
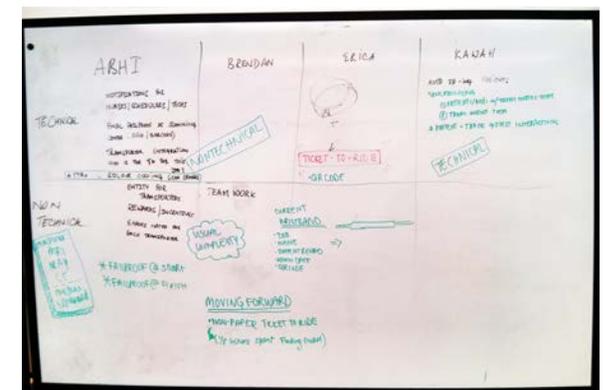
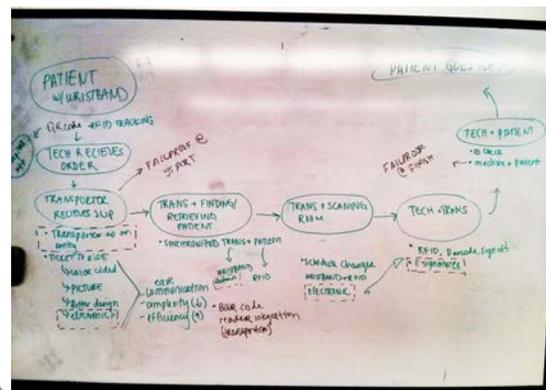
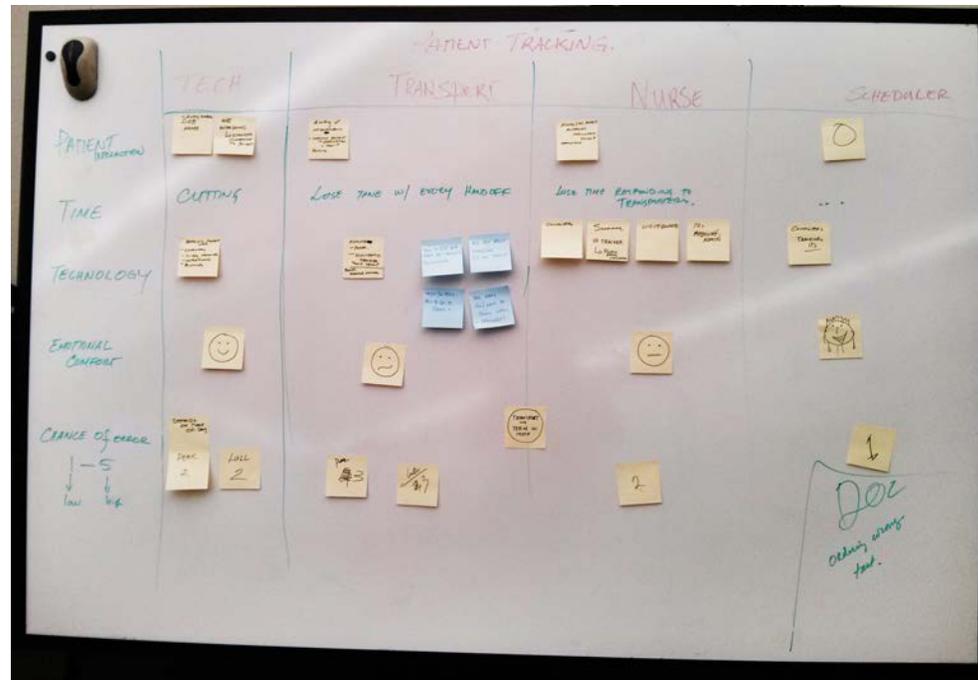
Manual Data Entry

Imaging machines are not necessarily synched with the current database, requiring Techs to transfer data manually. Any manual transference of information is prone to error.



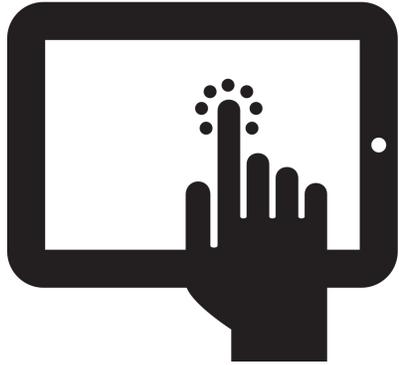
Ideation

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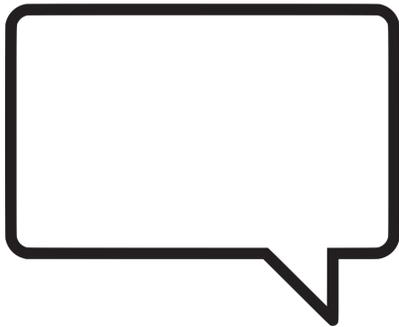
CHALLENGE

redefined



TECHNOLOGY

- focuses on the aid of devices and integrated systems to enhance user experience



COMMUNICATION

- focuses on the human aspect of patient, technician, transporter and nurse relations and improving the employee morale in solution.



A definite fail-proof patient identification and tracking system--with an initial investment--ultimately helps the hospital save money over time.



**Improves employee morale.
Enhances positive patient experience.**

SUGGESTIONS made by PERSONNEL

Barcodes/Scanners

Support in patient relations (coding patients)

Speechless communication (locators)

Elimination of TTR

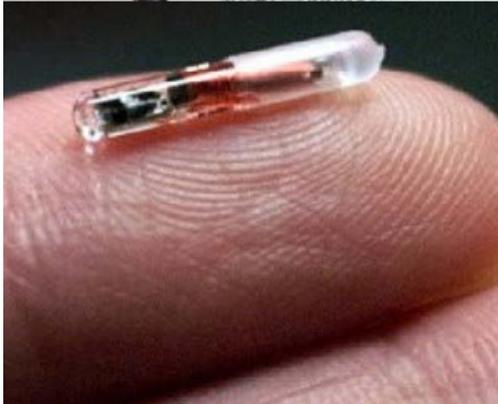
Reduced time spent searching for

Nurse/locating patient



TRENDS

Electronic paper A-4 display



RFID

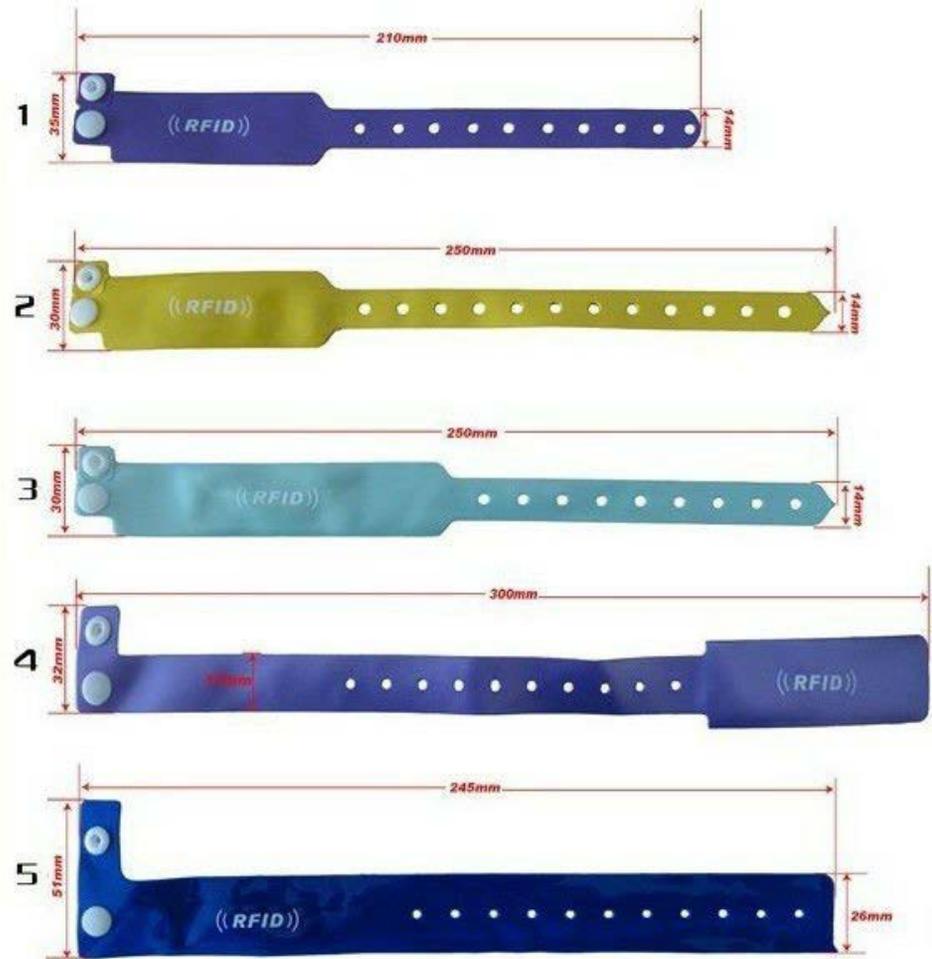


Barcodes
QR Codes



Biometric Scanning







PRODUCT concept

Smartphone APP

RFID

Barcodes

Software Integration

Mobile Devices

TA empowerment



FAILPROOF

at beginning and end



Current

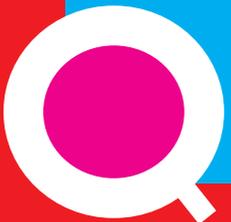
- 1 Ticket To Ride (TTR)
- 2 Manual patient identification
- 3 Monitors in hallways
- 4 QR code - wristband
- 5 Color coded wristbands

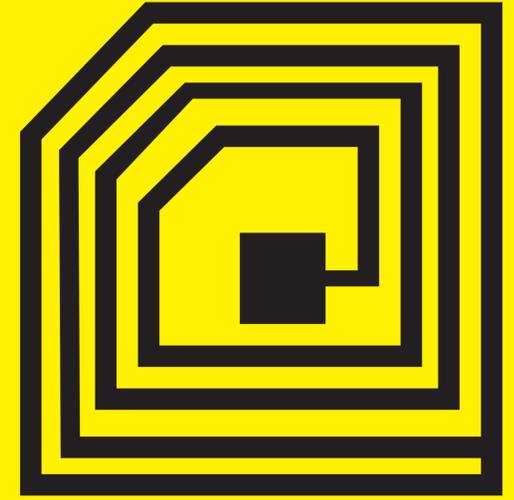




Better

- 1 RFID wristband.
- 2 Barcode scanner for tech
- 3 RFID tag for transporters.
- 4 Improved software integration.





Best

- 1 RFID Wristband
- 2 Electronic device (tablet/-
3 phone) with RFID scanning
and card swipe.
- 4 RFID scanner for tech.
Improved software integra-
tion.



Procedure



TIMELINE

Current



Better



Best



Procedure



Order

Order received by imaging center and processed.
Ticket To Ride (TTR) form printed and given to TA



No Change



Order received by imaging center and processed.
ELECTRONIC Ticket To Ride (TTR) form accessed
via smart device.

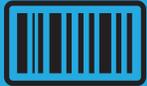


Procedure



TA Transit to Patient

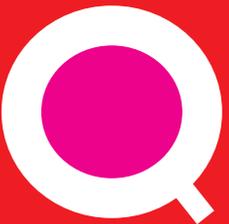
TTR information provides patient identification and location at a processing time.



No Change



Electronic TTR provides real time location of patient in hospital.



Procedure



Contact

TA confirms patient's identity and confirms transit with nurse sign-off.



TA confirms patient's identity aided by color-changing **SMART WRISTBAND**.



SMART DEVICE passively scans for correct patient.
E-SIGNATURE - "Bump" confirmation or ID swipe from nurse.



Procedure



Transit to Imaging

TA moves patient to imaging site.



Tech able to visualize TA location and patient status.



Tech able to visualize TA location and patient status.



Procedure



Imaging Center

Tech conducts secondary confirmation, performs scan, and manually enters data.



Tech scans **BARCODE** on wristband and on TTR. Scan proceeds upon correct **MATCH**.



RFID passively confirms patient's identity and communicates with imaging machines - **GO/NO GO**.



Procedure



Return Transport

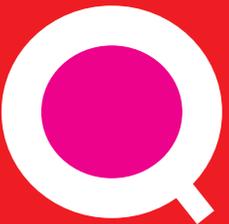
TA moves patient back to original location and leaves in nurse's care (after nurse is located).



No Change



Nurse is alerted to patient's return movement.
Nurse's location visible to TA.
TA is updated if patient destination has changed.
E-Signature



Procedure



TA Proceeds to NEXT

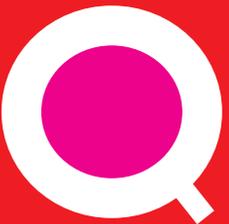
TA moves to location of next patient as determined by TTR.



TA moves to location of next patient as determined by TTR.



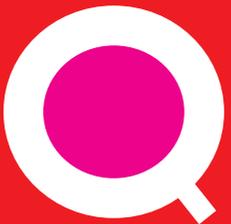
TA's next order is tasked on the basis of TA location.



ERROR

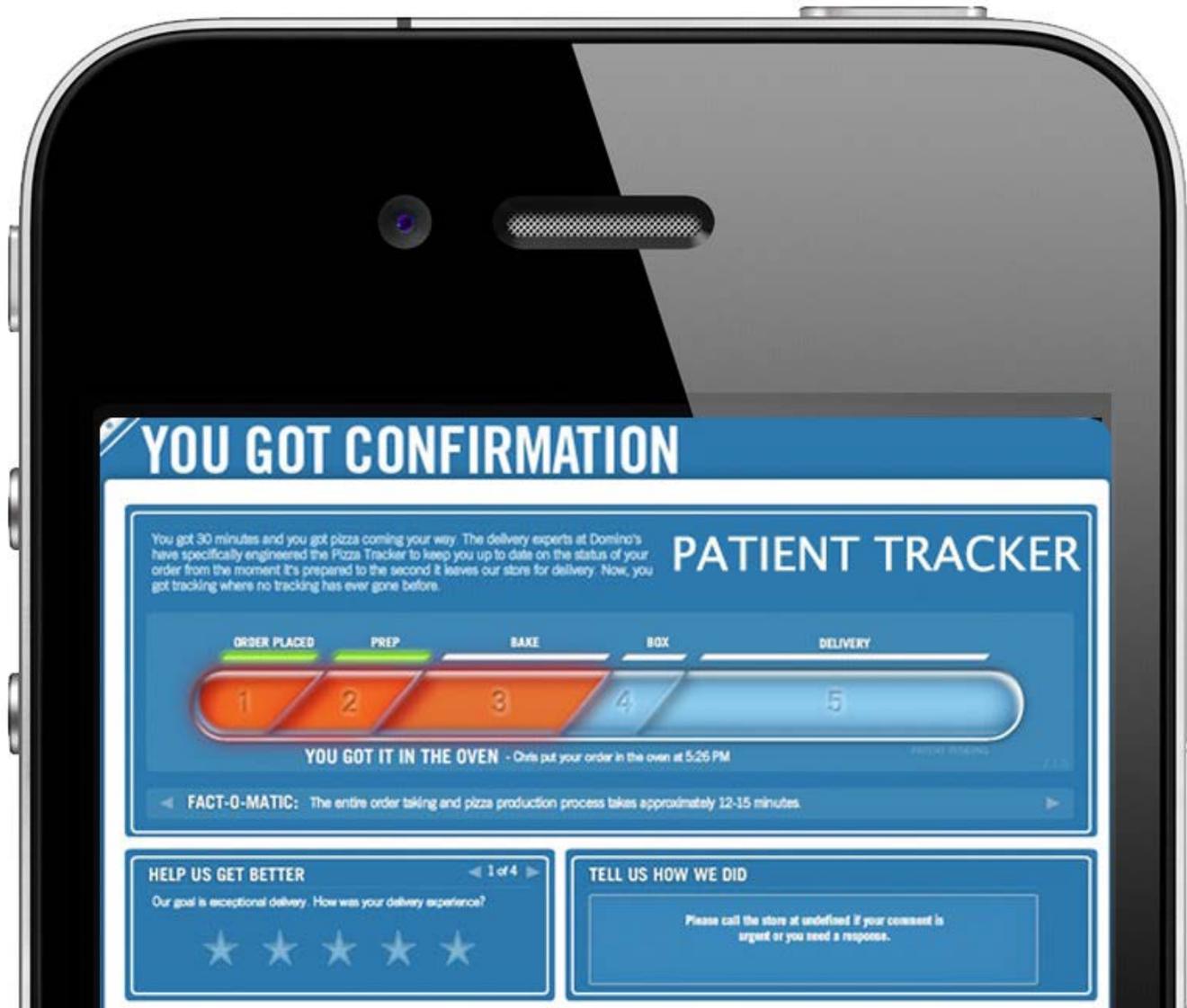
modalities

No wristband	RFID tag on TA fails to recognize patient. Patient immediately given a wrist band.	Electronic device cant recognize the patient. Patient is immediately given a wrist band.
Missing patient	Imaging Center barcode scanner immediately recognizes and prompts the technician	Electronic device prompts the TA the patient is being wheeled to the wrong location
Wrong patient	RFID tag on TA glows Red prompting it is the wrong patient	RFID in device recognizes it is not the right patient.
TA at wrong location	RFID tag glows Red to prompt TA that they are at the wrong place	Device prompts TA based on location and points them in the right direction
Elevator down	TA can reach the technician via telephone or as they would in a corresponding situation today.	Technicians notified via the electronic device by the TA
Scan center down	No device for real time notification, Tech cannot reach the TA	TA notified by the technicians via the electronic device



APP

Interfaces with patient and hospital



Cost

RFID wristbands (patients) \$0.50/tag - \$3/tag	NO Change
RFID LED band \$2 - \$4 ea.	Smart Device \$700 - \$2000 ea.
Barcode scanner \$75 - \$200 ea.	RFID Scanner \$75 - \$200 ea.
Software: TBD	NO Change



WHAT'S NEXT?

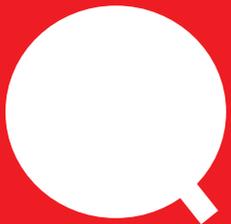


- Consult current service providers

Epic Software
Carestream

- Seek new IT providers

- In-house development



Questions?

