



# Microsoft Health and Wellness Design Challenge

Carnegie Mellon University . Team EPIC  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

UPMC South Side Hospital  
Amy Kowinsky

# Team EPIC

We are an interdisciplinary team from Carnegie Mellon University, with backgrounds in Human Computer Interaction, Industrial Design, Interaction Design, Computer Science, Business, and Psychology.

Empower



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Team EPIC

We are an interdisciplinary team from Carnegie Mellon University, with backgrounds in Human Computer Interaction, Industrial Design, Interaction Design, Computer Science, Business, and Psychology.

## Empowering Patients

We aim to **empower short term patients** during post-surgery recovery at the hospital.

By exploring issues of **communication, activities, relationships, trust & privacy** between patients and health care providers, we wish to find opportunities to deliver a service that will enhance the patient experience.



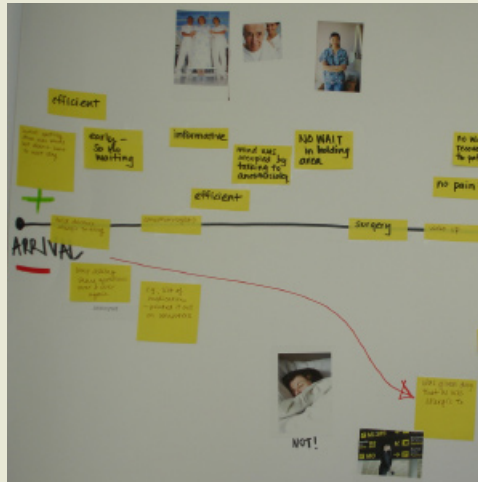
Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Exploratory Research

at the Orthopedic Surgery Recovery Floor at UPMC Southside



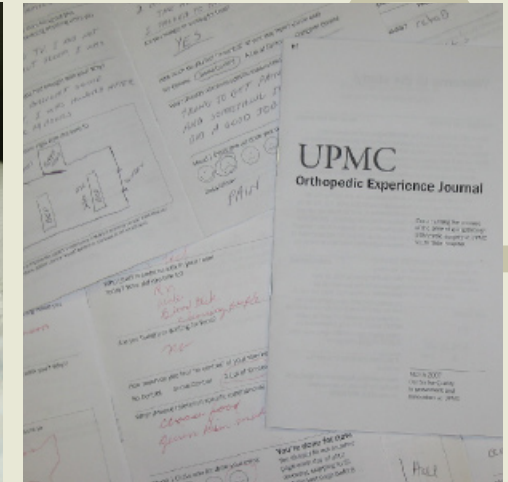
Staff Surveys (5)



Patient Collages (3)



Patient Interviews (7)



Journal Studies (26)



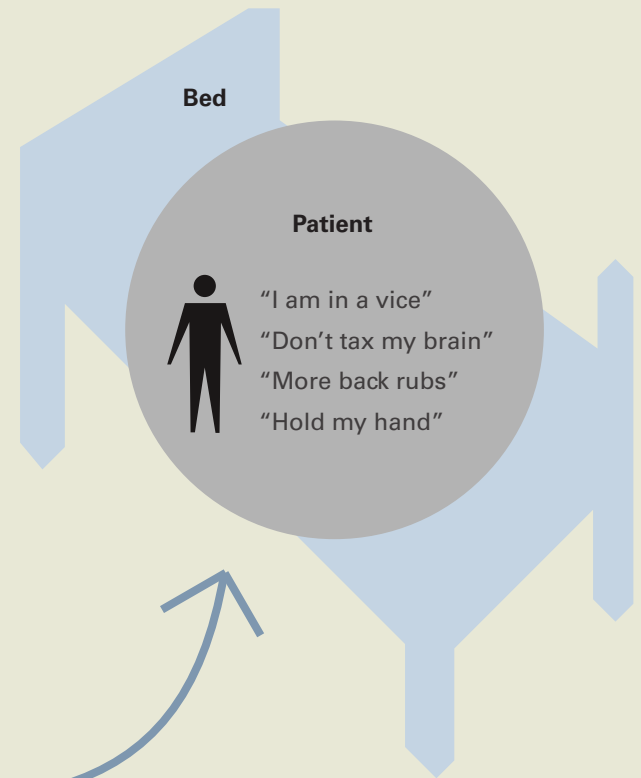
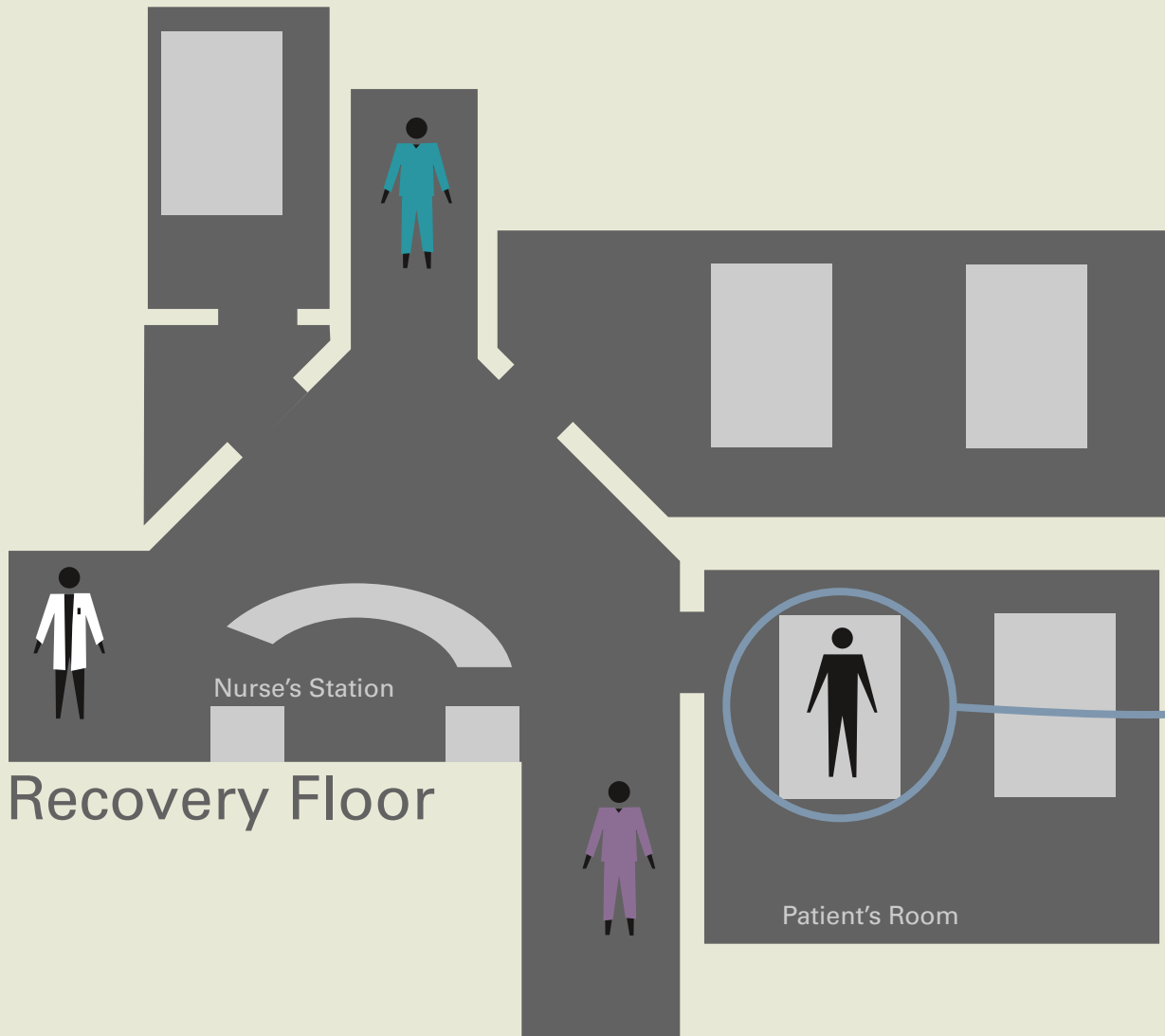
Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

# Service Opportunities in the Recovery Room



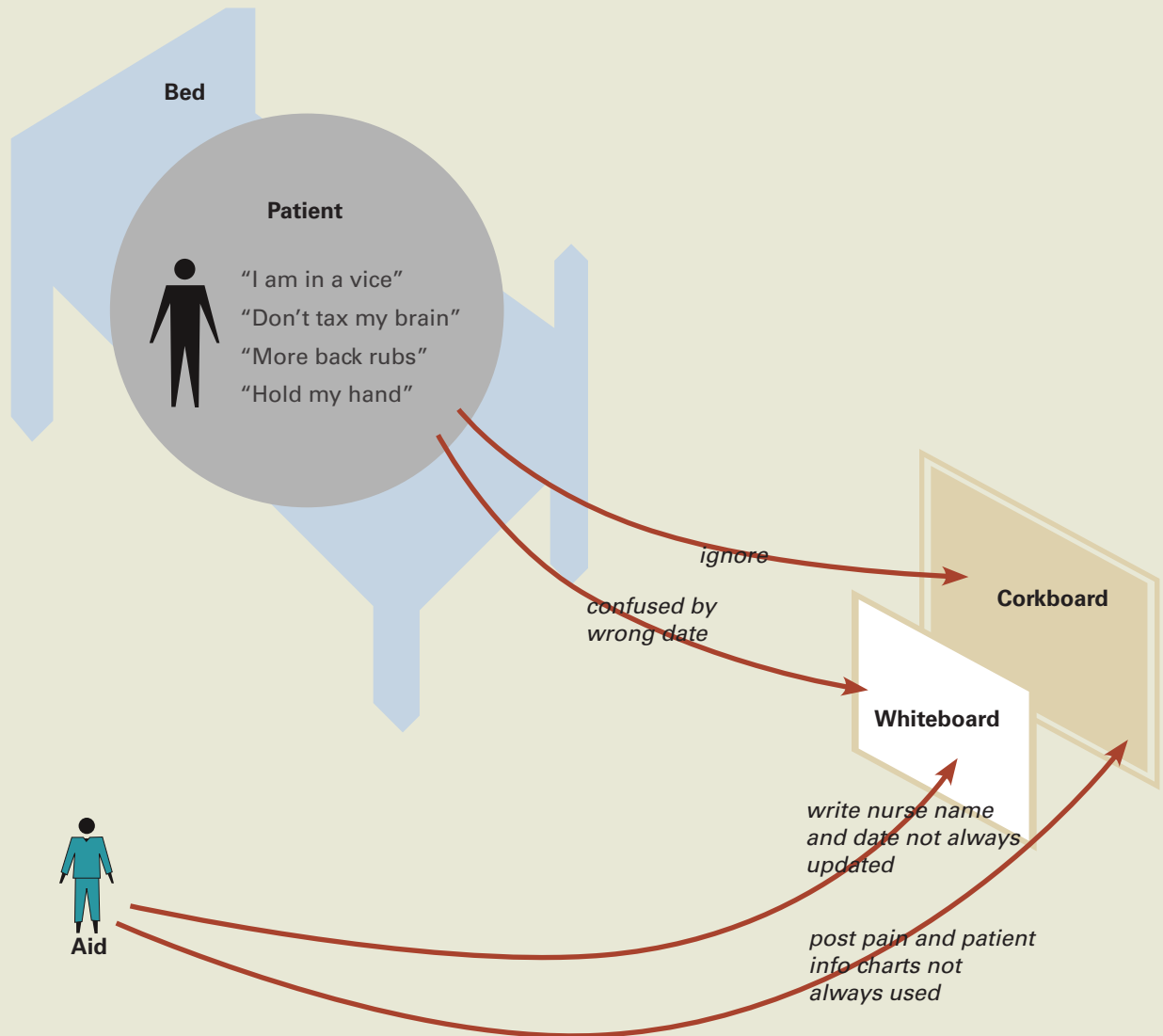
# Communication Tools

## Communication Tools

Communication Itself

Communication Follow-Through

Accessibility & Comfort



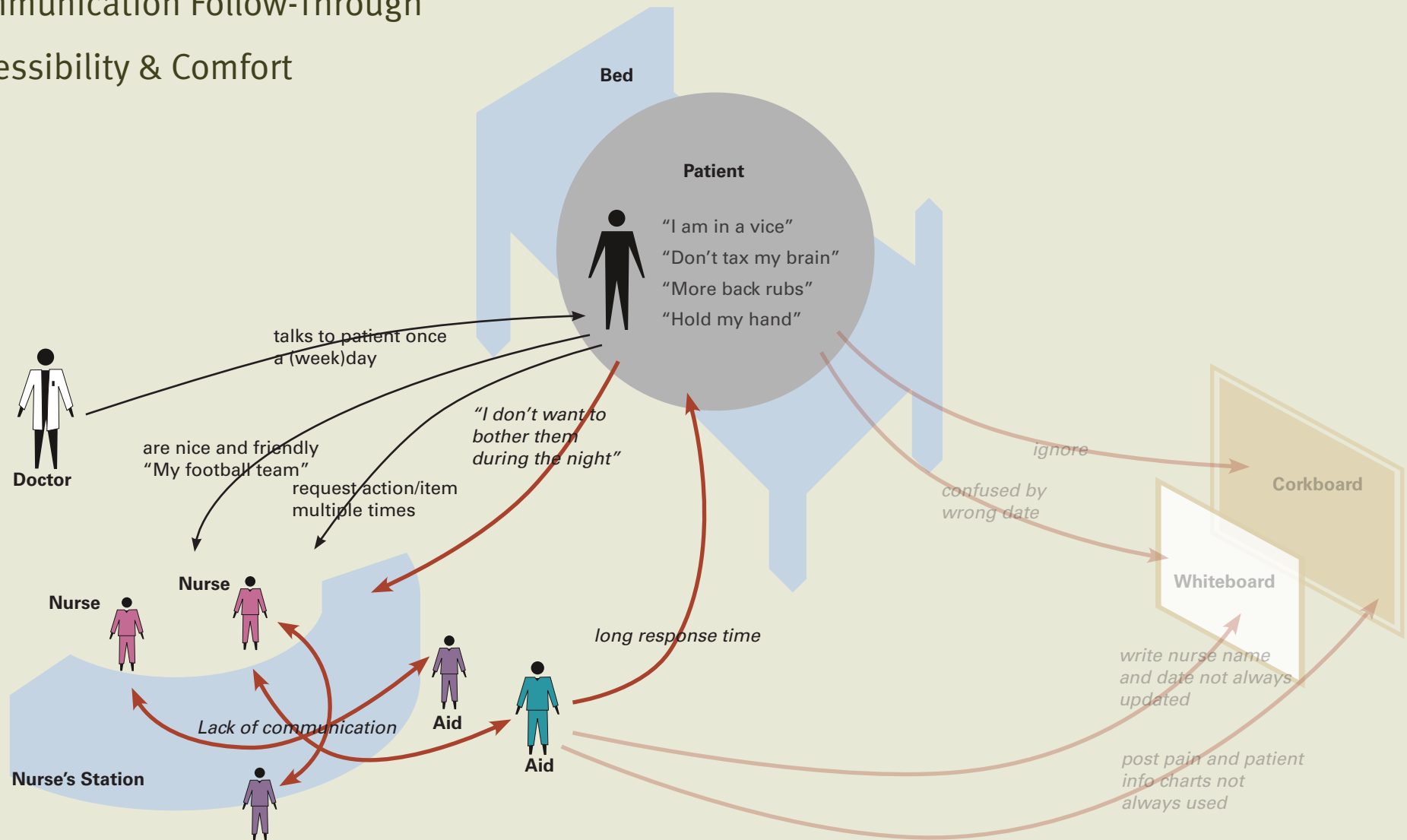
# Communication Itself

Communication Tools

Communication Itself

Communication Follow-Through

Accessibility & Comfort



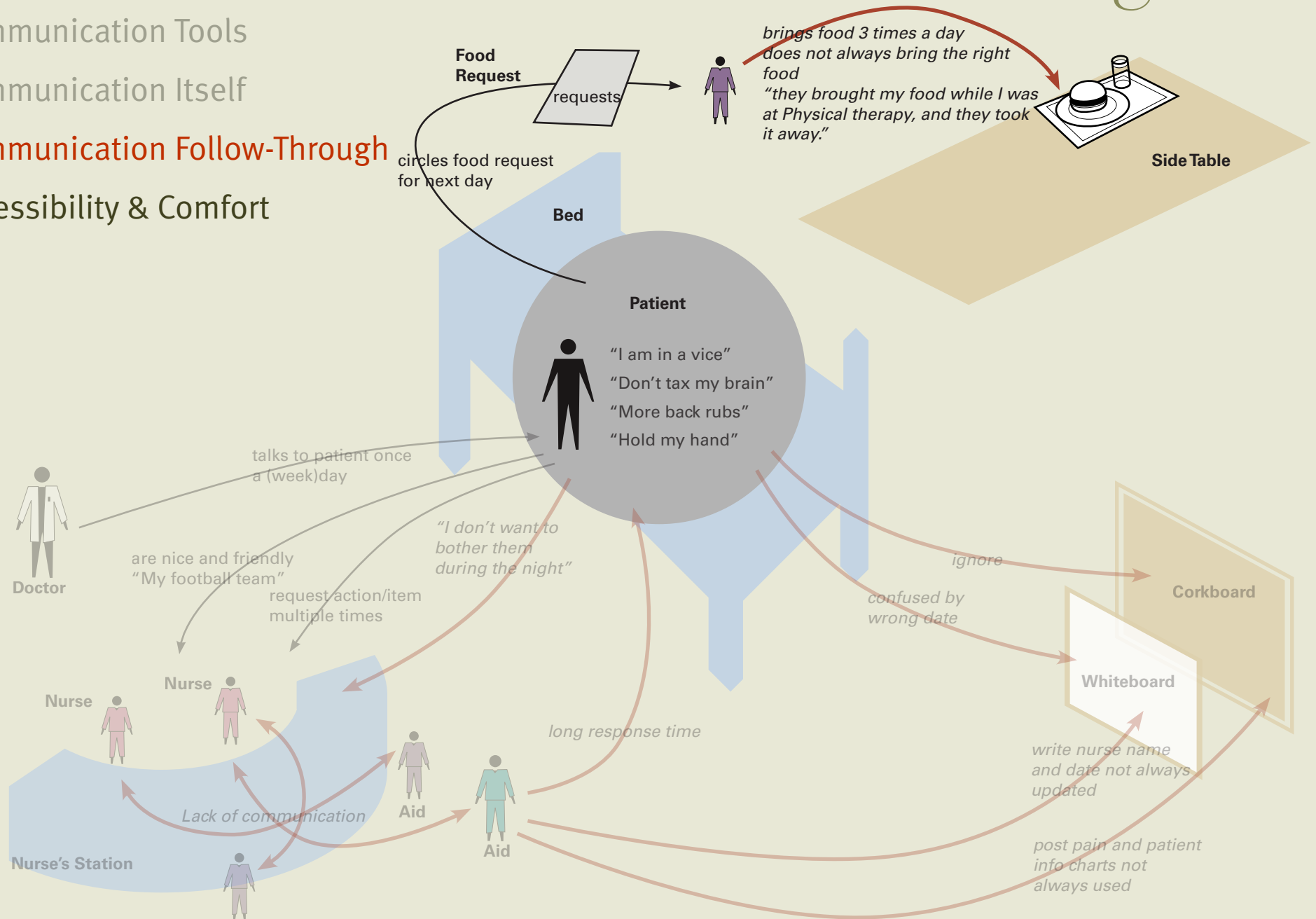
# Communication Follow-Through

Communication Tools

Communication Itself

Communication Follow-Through

Accessibility & Comfort



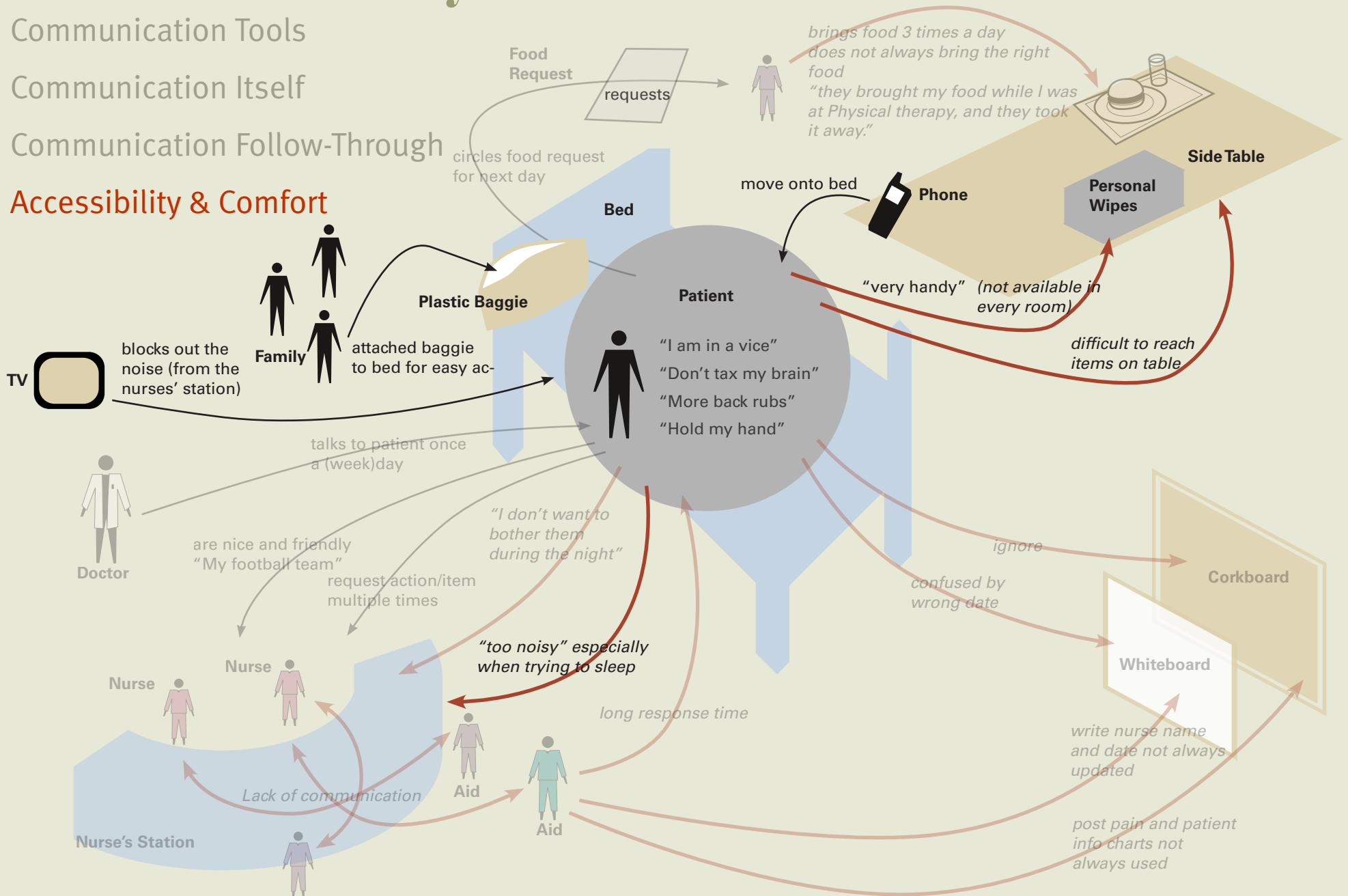
# Accessibility & Comfort

Communication Tools

Communication Itself

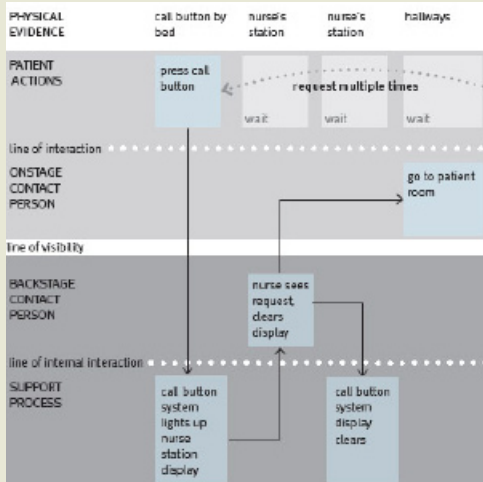
Communication Follow-Through

## Accessibility & Comfort



# Ideation & Valida-

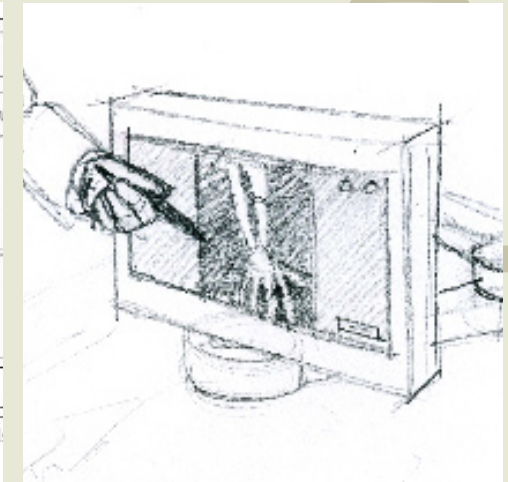
empowering patients through communication and accessibility



Patient Theresa sees that her roommate is in pain and needs help.



Patient Theresa presses "help" on her bed to get help on her roommate.



Service Blueprints

Idea Generation

Concept Validation

Refinement



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

# Concepts on the Recovery Floor

## Low Tech Concepts at UPMC Southside

Nurse Display Upgrades

Envoy Communication System

Envoy Nurse Backend



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

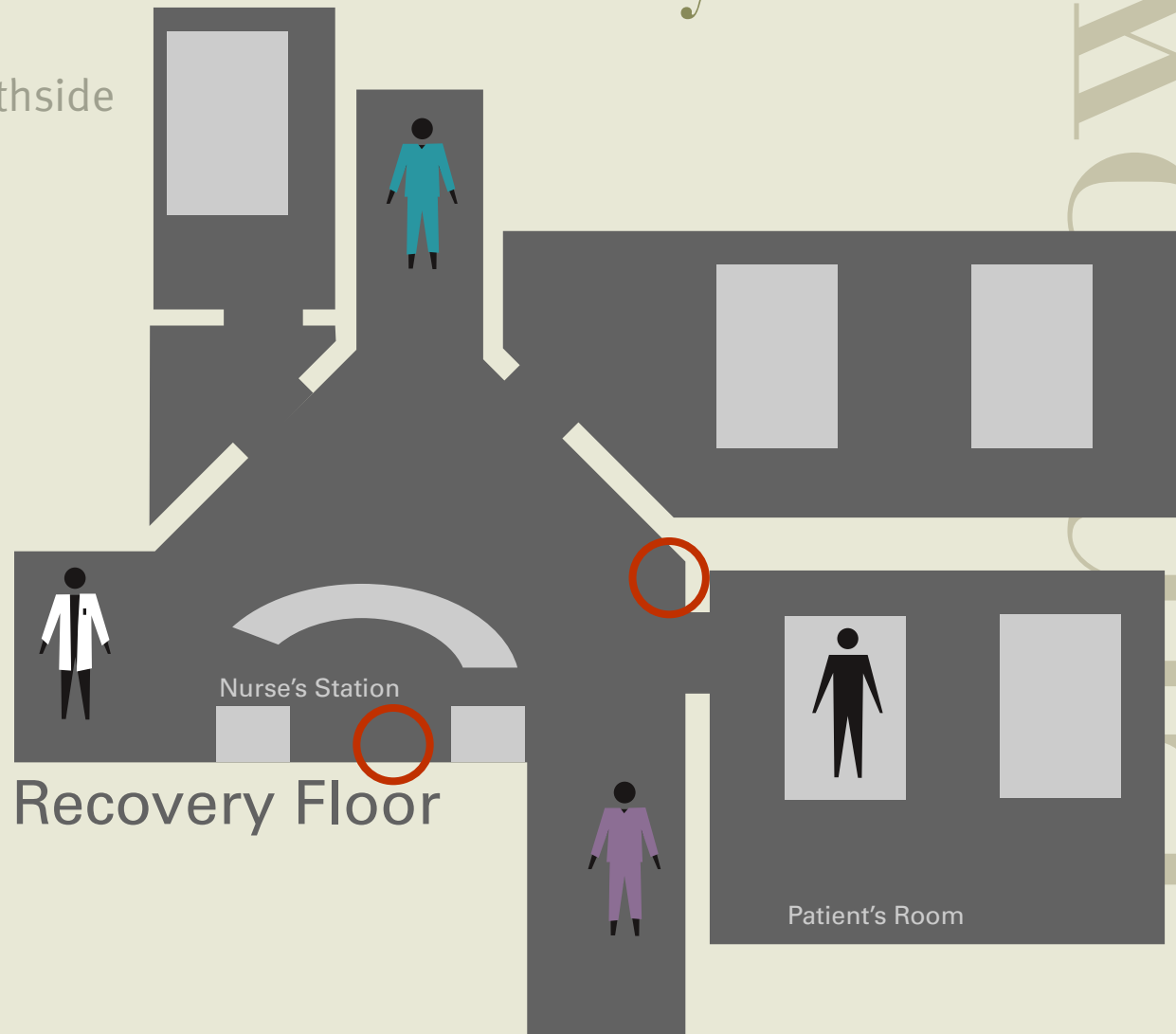
# Concepts on the Recovery Floor

Low Tech Concepts at UPMC Southside

**Nurse Display Upgrades**

Envoy Communication System

Envoy Nurse Backend



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

# Concepts on the Recovery Floor

Low Tech Concepts at UPMC Southside

Nurse Display Upgrades

Envoy Communication System

Envoy Nurse Backend



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

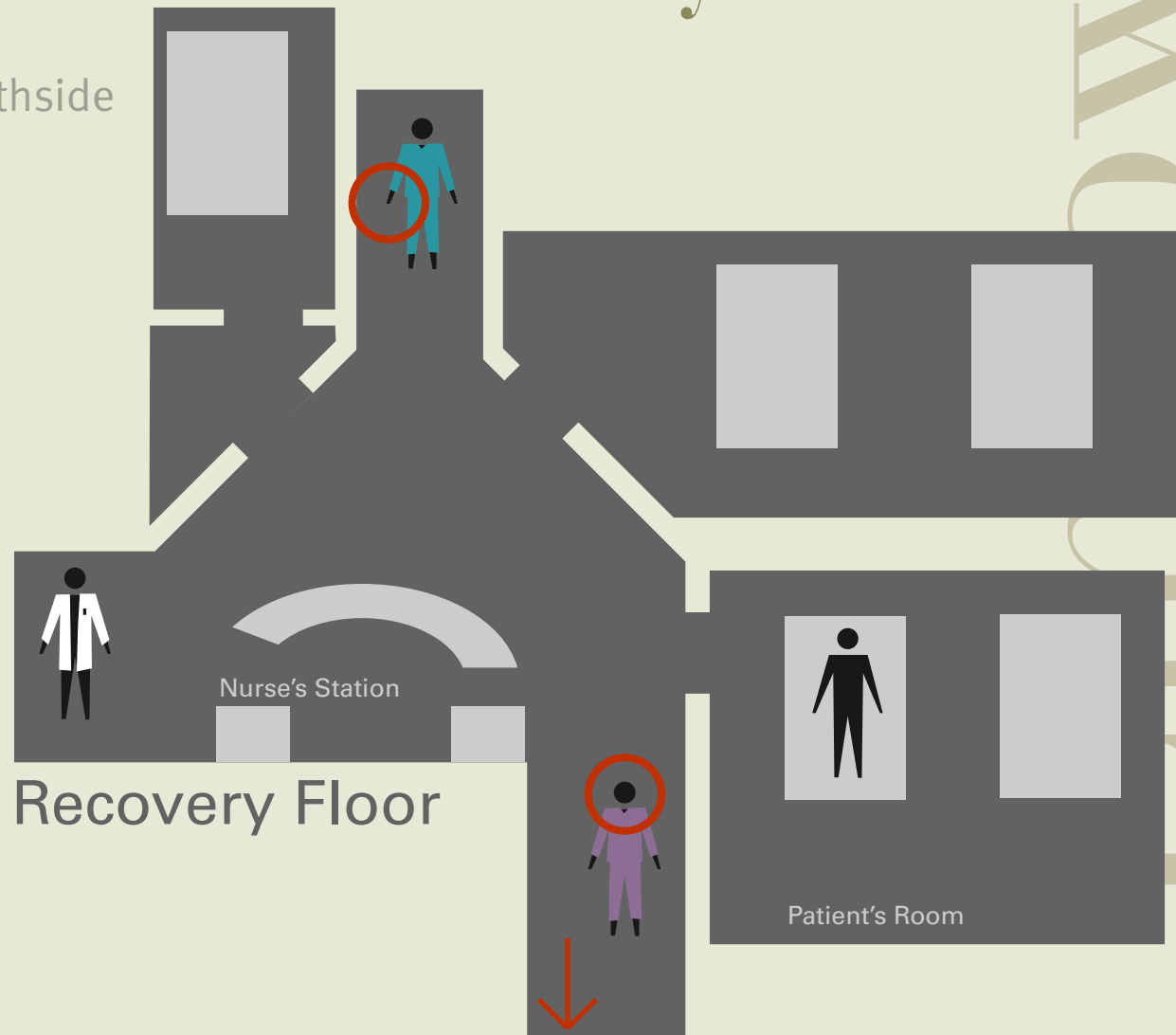
# Concepts on the Recovery Floor

Low Tech Concepts at UPMC Southside

Nurse Display Upgrades

Envoy Communication System

Envoy Nurse Backend



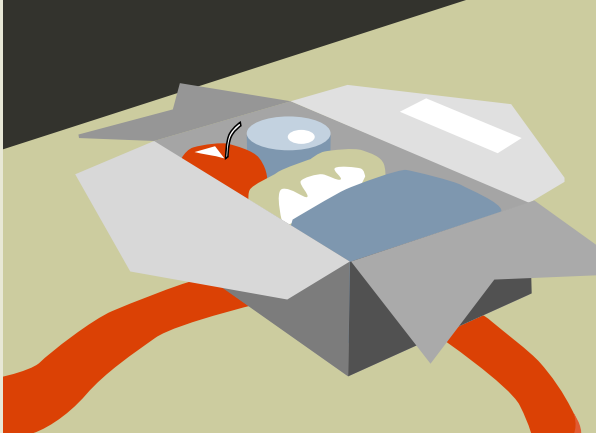
Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

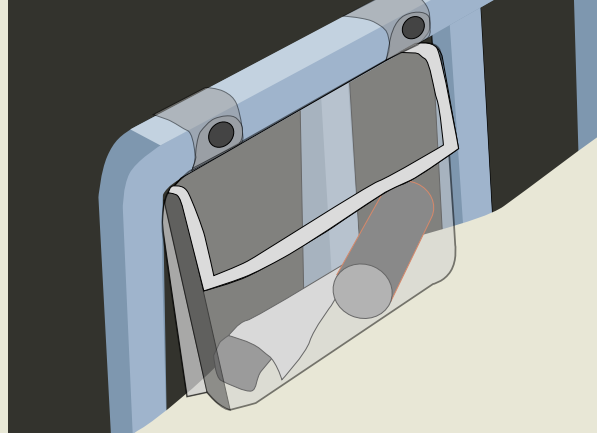
# Low Tech at UPMC Southside



## Welcome Kit

Contains basic necessities that are essential to a recovery stay, such as a toothbrush, as well as post-surgery snacks

“This will make the patient feel like we were expecting them.” - Nurse



## Bedside Pouch

Increases accessibility to items

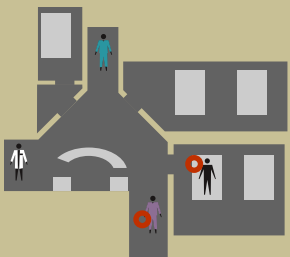
“It can be a central place for everything the patient needs in bed, including their phone and call button.” - Nurse



## Service Cart

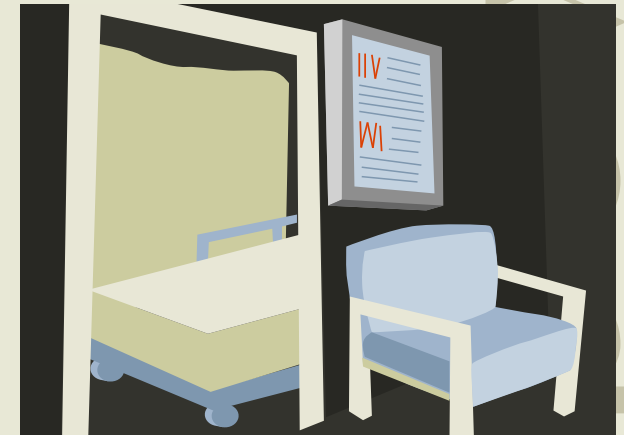
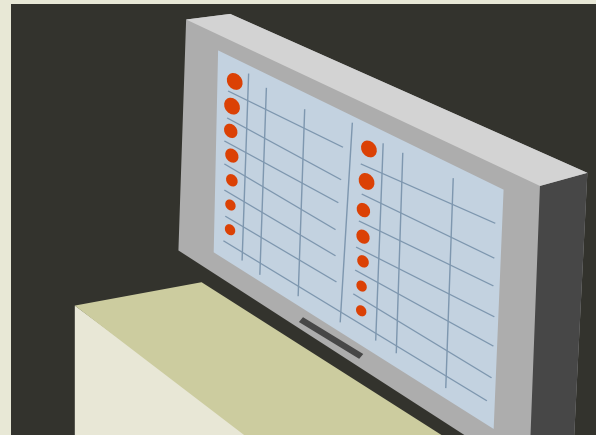
Daily rounds through the recovery rooms offering and restocking frequently used items

“Service Cart is a given! A volunteer can push it around.” - Nurse



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Nurse Display Upgrades

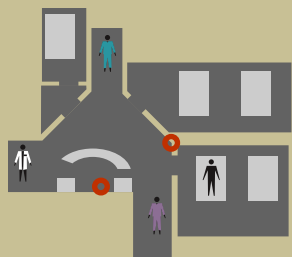


## Digital Whiteboard

Shows and automatically updates all patient room information for the recovery floor, such as nurse in charge and discharge status

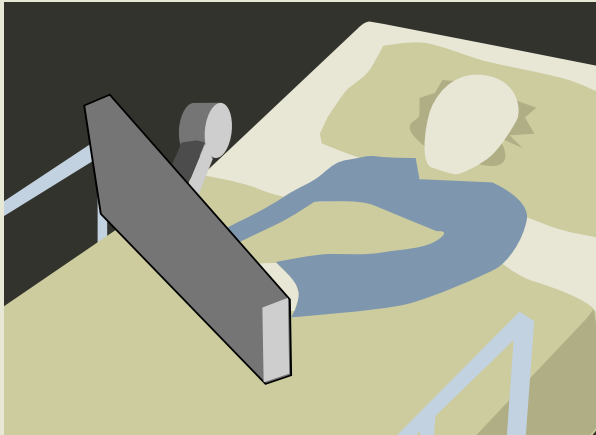
## Doorside Display

Shows patient specific notes, such as being a fall risk



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

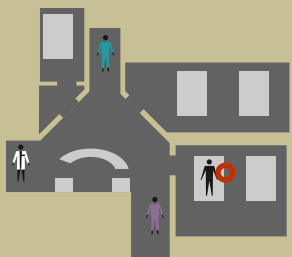
# Envoy Communication System



## Bedside Touchscreen

Facilitates communication with staff, and retrieval of information

“The nurses and aids are busy, but with this you can communicate and tell them exactly what you need”  
- Patient



→ ● ← envoy

Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Envoy Nurse Backend



## Stockroom Display

Creates increased awareness of item requests

“This will save legwork as we retrieve items.” - Nurse



## Nurse Palm Pilot

Disseminates patient requests directly to the nurse in charge

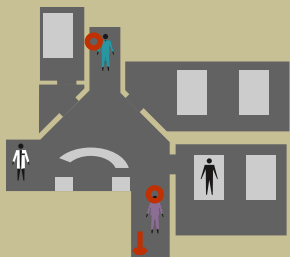
“We should be decentralizing the nurse station.” - Nurse



## Nurse Headphone

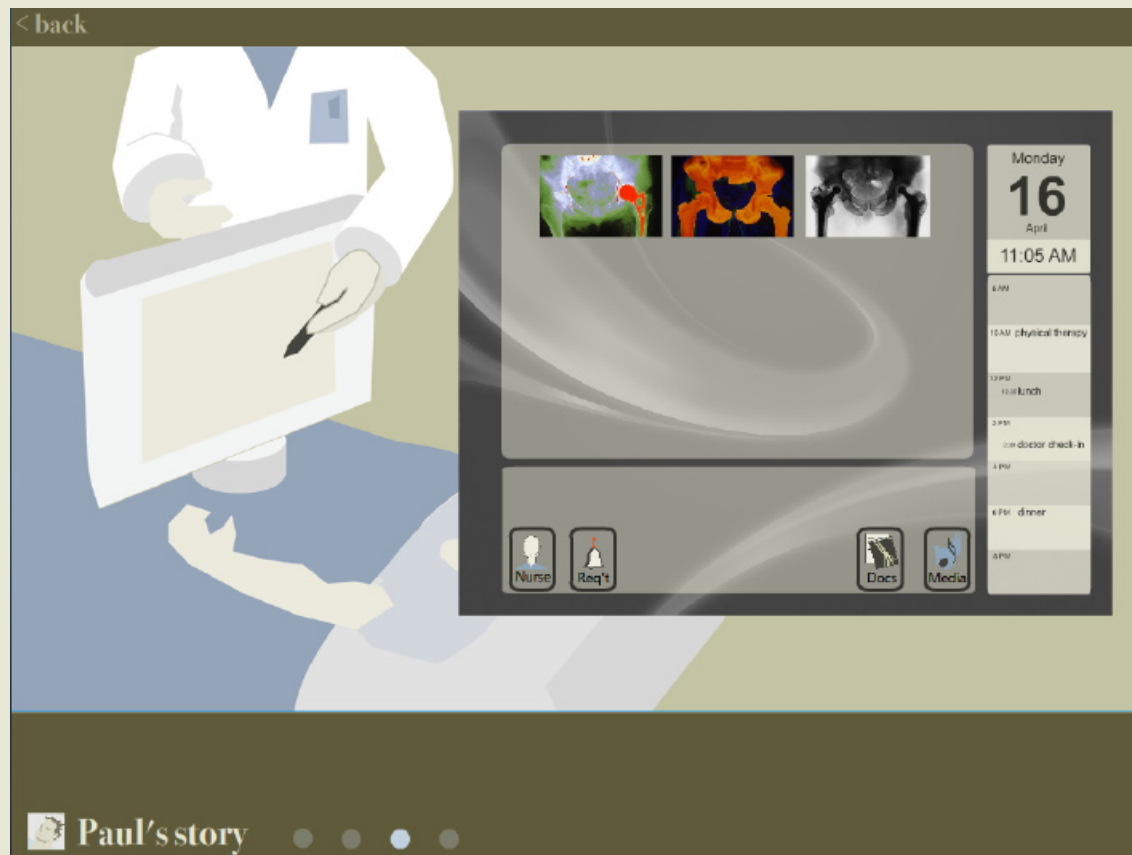
Provides instant communication between patients and nurses

“We need to drive care providers back to the patients.” - Nurse



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Envoy in Action

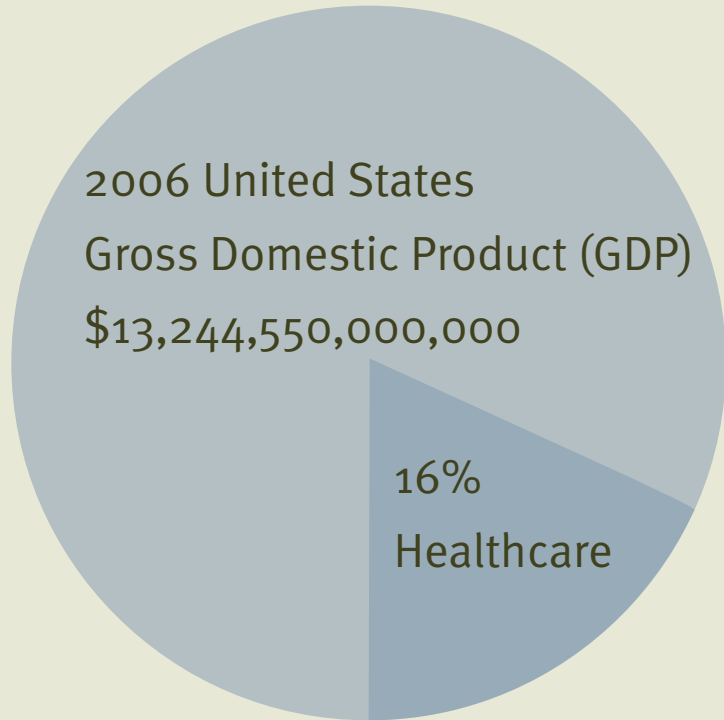


Empower



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank

# Healthcare Industry



In 2006 ...

Total GDP           \$13 trillion

Healthcare           16%

---

Healthcare           \$2 trillion

In 2014 ...

Healthcare is expected to rise to **18.7%** of the GDP

Source: Healthcare Almanac 2007, Plunkett Research Limited

Empower



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

# Envoy in Healthcare



Increases Patient Knowledge

Increases Patient Control



Reduces Errors

Increases Staff Efficiency

Empowers Patients

Saves Money



Empower



Microsoft Design Challenge

Carnegie Mellon University . Team EPIC . Spring 2007

Carrie Chan . Charis Lim . Saara Kamppari

Yoko Nakano . Justin Rheinfrank

# Patient Empowerment

Through our research, ideation, and concept validation, we have created the Envoy bedside communication system to **empower short term patients** during post-surgery recovery at the hospital.

Empower



Microsoft Design Challenge  
Carnegie Mellon University . Team EPIC . Spring 2007  
Carrie Chan . Charis Lim . Saara Kamppari  
Yoko Nakano . Justin Rheinfrank