# RAIN® RFID ALLIANCE MEETING

## 18-20 JULY 2017

# RFID at Wayne HealthCare

Time Savings,

Patient Satisfaction,

Patient Security

# Who We Are

- Wayne HealthCare

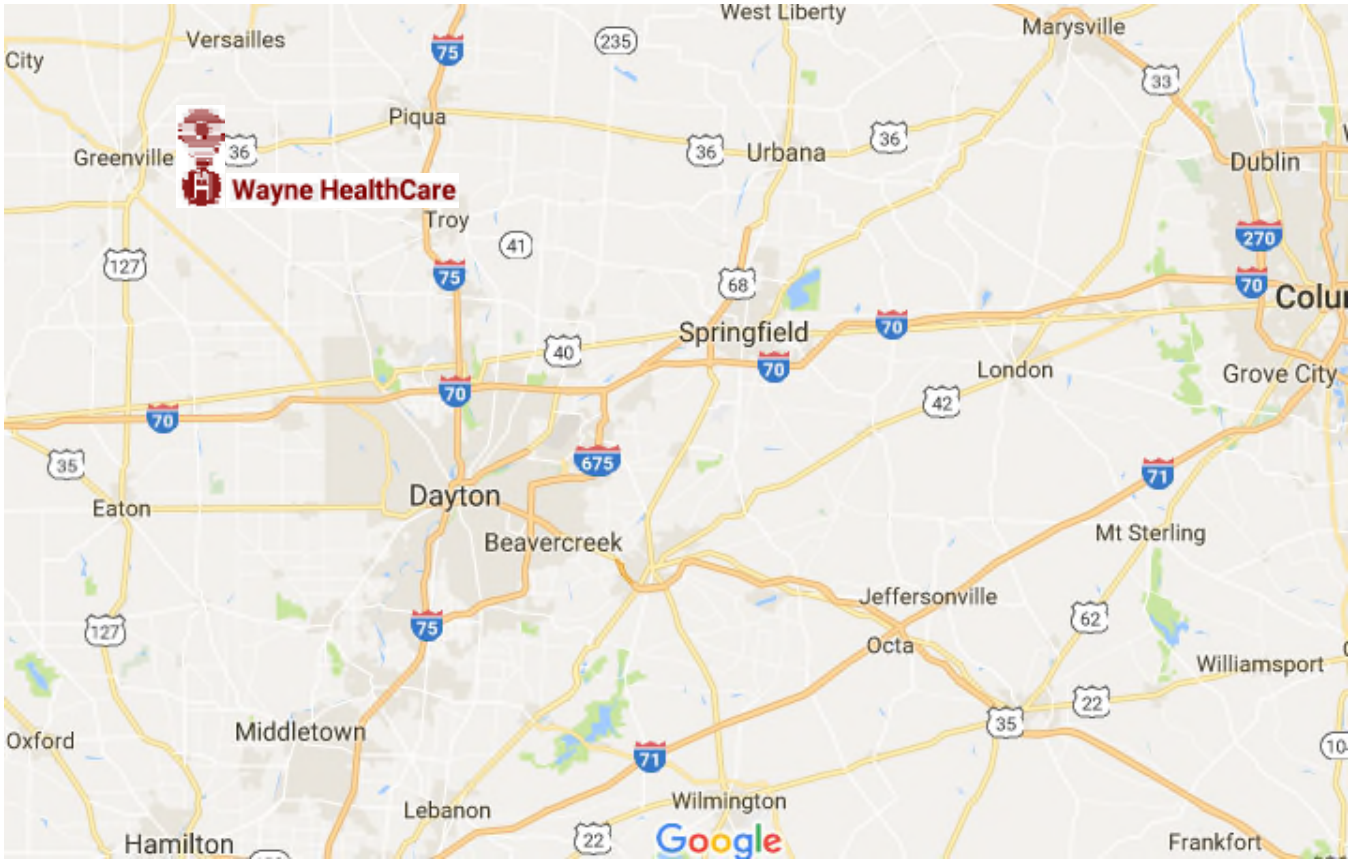
  - Mid-sized, rural hospital
    - ≈ 175 doctors, nurses & clinicians
    - ≈ 400 other employees
    - ≈ Countless volunteers and helpers

# Where We Are

- Greenville, Darke County, Ohio

  - About an hour northwest of Dayton
  - Farming community
  - Demographically elderly population

# Where We Are




WAYNE HEALTHCARE

RAIN RFID Alliance Meeting 2017

# What We Do

- Obstetrics
- ICU and Telemetry units
- Outpatient Rehab (physical/occupational therapy, etc.)
- Surgery
- Many other services

# Clinical Systems We Use

- Evident from CPSI
  - Marketed to small to mid-side hospitals
  - Much less expensive than other systems
  - Somewhat limited in capability

- Other unrelated, clinical systems

# RFID at Wayne HealthCare

- Asset Tracking
- Patient Satisfaction
- Patient Protection

# RFID at Wayne HealthCare

## Asset Tracking

# Asset Tracking

- Reasons to automate
- What we need to track
- Process changes
- Benefits realized

# Asset Tracking

- Reasons to automate
  - Annual inventory was taking a long time
    - Need to account for any equipment which may contain patient information (HIPAA strategy)
    - Often needed to outsource project
  - Items often went “missing” to later be found in closets and drawers

# Asset Tracking

- What we must track
  - Any item which could potentially store data
    - PCs, laptops, tablets, etc
- What we actually track
  - Pretty well everything
    - Simplicity and speed of inventory makes this decision easy

# Asset Tracking

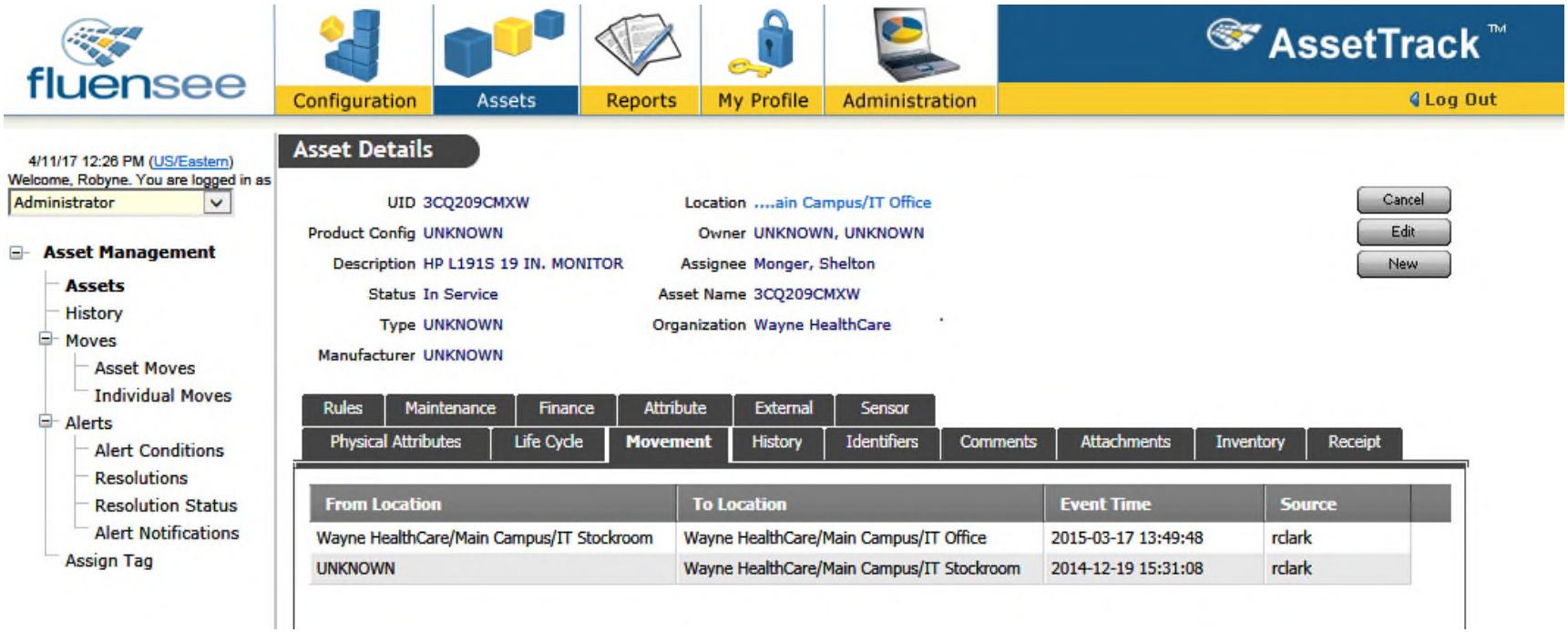
- Process changes
  - Application of RFID tags to equipment before deployment
    - Found that different tag styles produce better results when attached to certain equipment types
    - Some experimentation at the outset but have now settled on a standard for almost all items
  - Entry into “AssetTrack” application

# Asset Tracking

RFID tag examples

# Asset Tracking

"AssetTrack" screenshot



# Asset Tracking

## Alien ALH9011 Scanner

# Asset Tracking

- Benefits realized
  - Inventory effort has been reduced from approx. 160 man hours to about 40
  - Discovers items which have been stored in drawers and storage closets
  - Less disruption in offices and patient care areas

# RFID at Wayne HealthCare

## Patient Satisfaction

# RFID Patient Tracking System

- Installed in Department of Surgery
  - Process Study
  - Software Development
  - Hardware Selection
  - Installation
  - Refinement

# RFID Patient Tracking System

- Goals
  - Provide instant feedback to family members
    - Patient satisfaction always a priority
  - Provide a virtually self-running system
    - Allow nurses to take care of patients – not a computer system

# RFID Patient Tracking System

- Constraints
  - Evident does not provide an integrated patient tracking function
    - Larger systems do but at a much higher cost
  - Provide a virtually self-running system
  - Keep costs reasonable

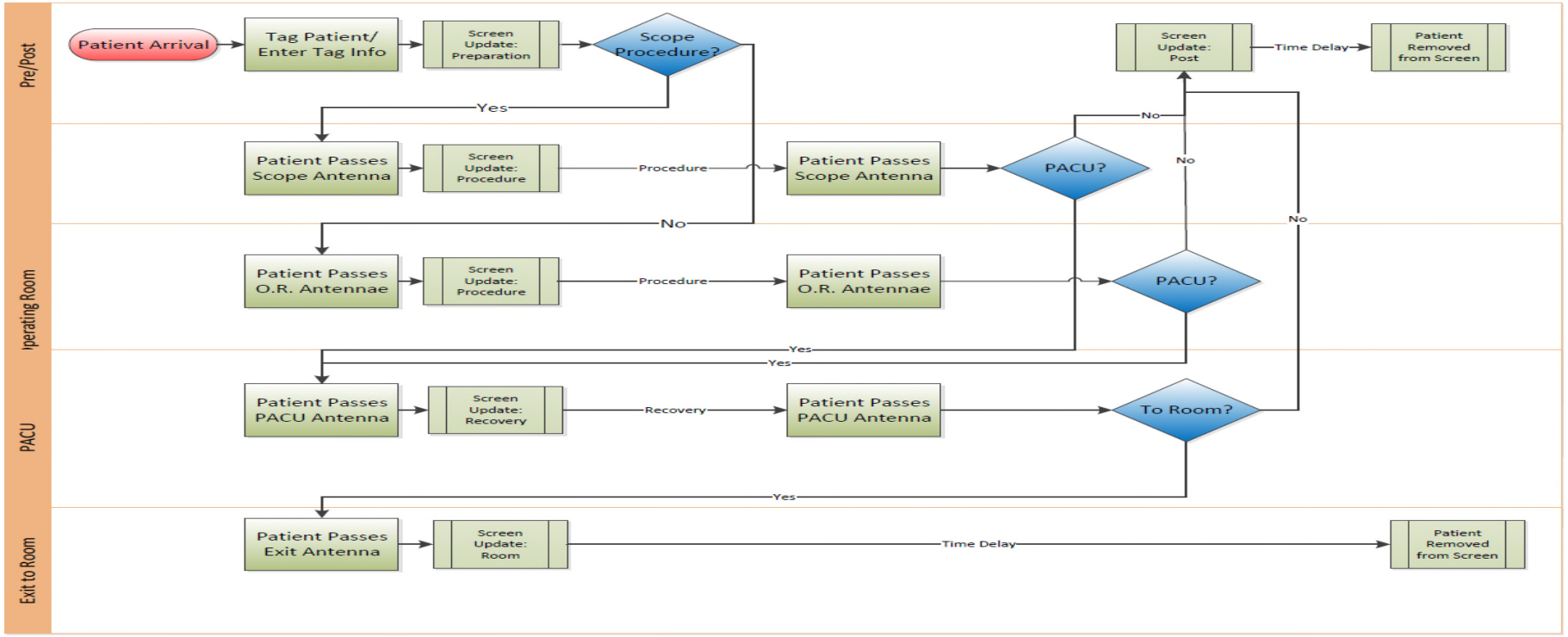
# RFID Patient Tracking System

- Process

  - Study of how nurses move patients through surgical process
  - Graph of surgery unit layout
  - Strategic placement of antennae and readers

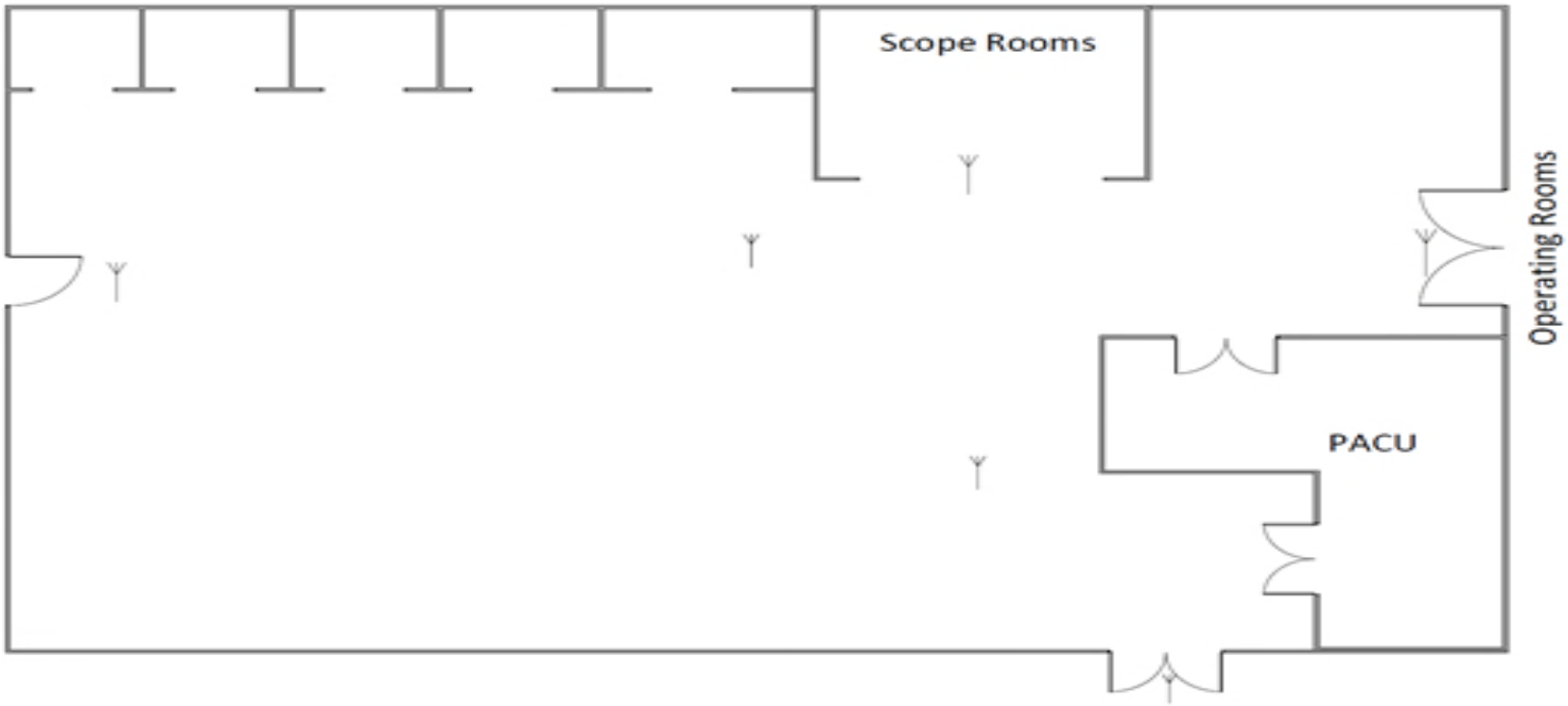
# RFID Patient Tracking System

- Process flow study



# RFID Patient Tracking System

- Unit layout and hardware placement



# RFID Patient Tracking System

- Software
  - "ItemAware" (by Aware Innovations)

    Work In Progress
    - Java Application – Interfaces with readers and processes events
    - MS SQL Database – stores users and tag locations
    - Web based management console
    - Web based waiting room display

# RFID Patient Tracking System

- Hardware
  - Four Alien ALR-9900+ passive RFID readers
  - Six Alien Antennas ALR-8696-C
  - Raspberry Pi Computer/Television for Waiting Room


# RFID Patient Tracking System (cont.)

- Installation

  - Coordination with electricians and other in-house services
  - Scheduled around surgical cases

# RFID Patient Tracking System

- Refinement
  - Altered placement of some antennas
  - Refined some of the workflow logic to accommodate real-world operation
  - Some of the nurses needed to slightly modify their behaviors

# RFID Patient Tracking System

- Refinement (cont.)
  - Modified how RFID labels were used
    - Originally thought to place tag onto patient's wrist but this did not provide reliable results
    - Changed to placing tags onto the bed which follows a patient through the surgical process

# RFID Patient Tracking System

Picture of tag on bed

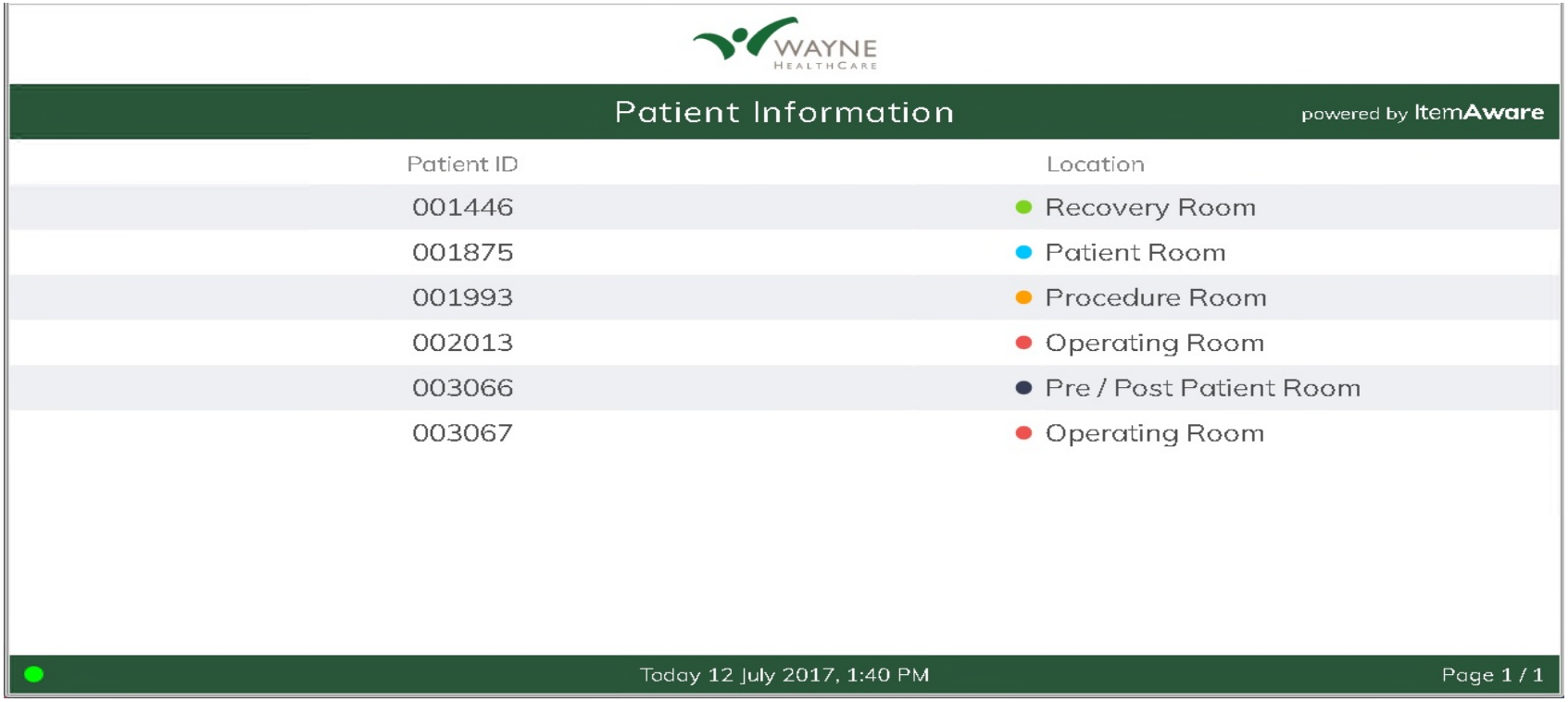
# RFID Patient Tracking System

- Patient tracking system in action

# RFID Patient Tracking System (Waiting room)

# RFID Patient Tracking System

## Family member view



# RFID at Wayne HealthCare

## Patient Security

# Patient Security

- Objective
  - To install a system which would better protect infants born at Wayne HealthCare
    - Special Beginnings obstetrics unit always well protected and locked-down
    - No precipitating incident or threat but security is always a concern.

# Patient Security

- Selection considerations
  - Ease of use
  - Ease of maintenance
  - Reliability
  - Cost

# Patient Security

- "Hugs" infant protection system from Stanley Healthcare (formerly Innovative Medical Solutions) selected
  - Met each of the selection criteria
  - In use at other medical facilities in Ohio

# Patient Security

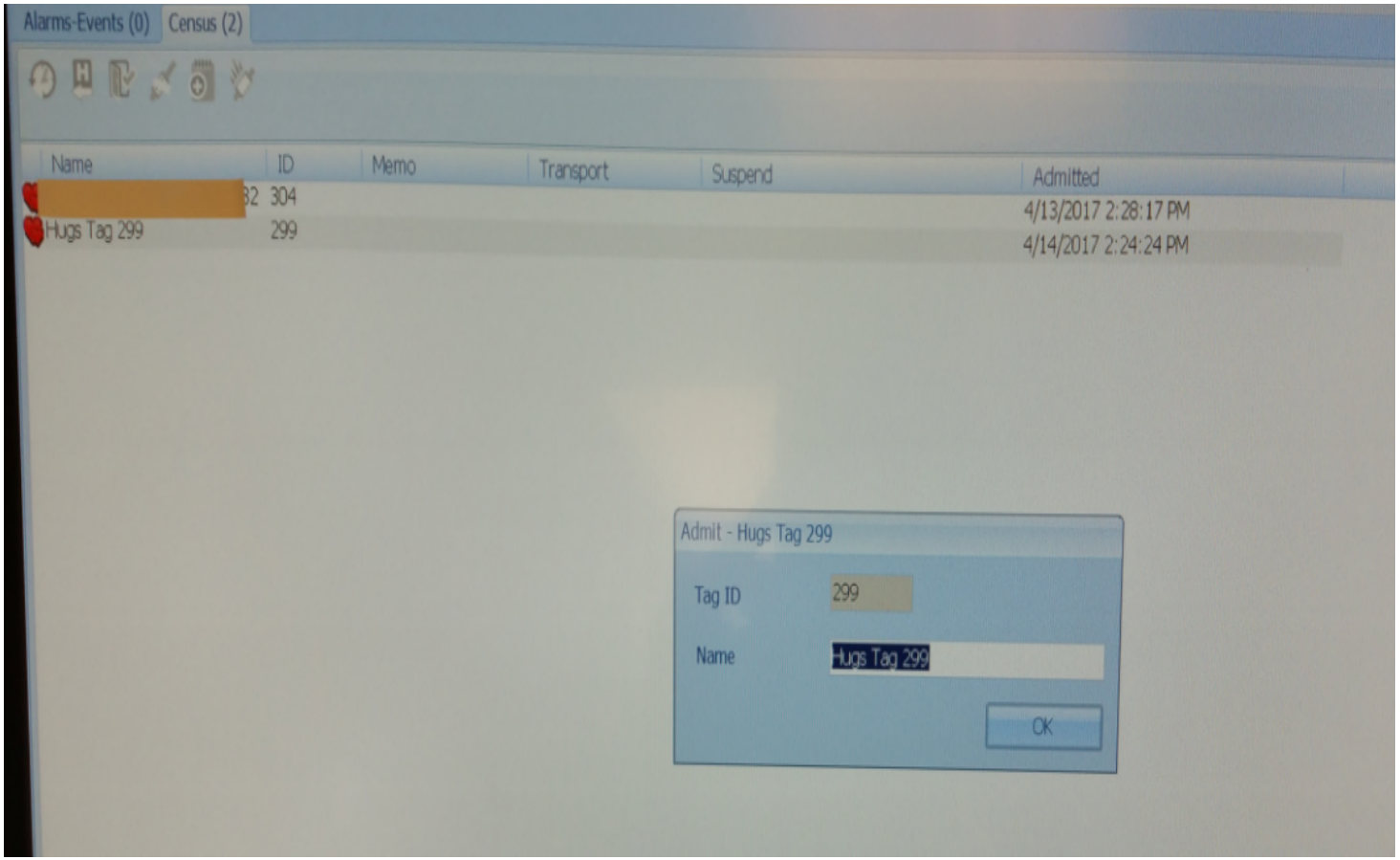
- Ease of use
  - System automatically generates a new target when a tag is prepared
  - Both audible and visual warnings of events

# Patient Security

Infant Tag

# Patient Security

Nurses' station view



# Patient Security

- Ease of maintenance
  - Vendor provides 24-hour centralized monitoring relieving IT staff
  - Nursing staff don’t need to babysit the system

# Patient Security

- Reliability
  - System alarms if:
    - Infant approaches any exit from the unit
    - The tag becomes unreadable if it has twisted on the leg
    - The tag is removed or becomes too loose
  - Very few false alarms

# Conclusion

- RFID is a technology that can be affordably used, even in smaller medical facilities.
- It has helped Wayne HealthCare to increase patient satisfaction, patient security, and employee productivity.

# Thank You

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