How RFID can deliver benefits to the operating theatre

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Overview

● What is RFID?
● Where has RFID been successful?
● Are there healthcare success stories with RFID?
● What are the barriers to wider applications of RFID?
● What innovation can RFID deliver in the operating theatre?
What is RFID?

Radio Frequency Identification = RFID

- RFID has been around for some time
  - First early RFID technology used in the WWII by RAF
  - The modern RFID chip has been around 70's
  - Now common place from retail to tracking runners
  - Printed barcodes still the primary tracking solution

- There are two main groups of RFID technology
  - Passive RFID chip technology
  - Active RFID tags, used Real Time Location Systems (RTLS)
Passive RFID Tags

- Passive RFID Tags
  - Common form of RFID
  - Powered by transmitted radio waves
  - Microchip with an aerial & unique ID
  - International RFID Standards
    - GS1 & ISO/IEC 18000
  - Disposable and reusable tag technology

Active RFID and RTLS

- Active RFID Tags
  - Location and tracking capabilities
  - Use existing Wifi to triangulate building location
  - Exciters activate tags in key locations
  - Battery powered

Source: www.boeingblogs.com
Source: www.wihartsstems.com
Source: http://odinrfid.com
Healthcare RFID Technology successes
Where has RFID been successful?

Healthcare

- Healthcare textile asset management
- Medical equipment tracking using RTLS
- Patient tracking using RTLS technology
- Pharmaceutical traceability
- Microbiology sample process tracking

Source: AeroScout
RFID success in Healthcare

- RFID Case Study Healthcare Services
- Synergy Health provides focused healthcare textile service
  - Surgical Drapes and Gowns
  - Uniform and Garment Rental
  - High value domestic services items
- Synergy tracks 4M items using passive RFID technology
- Over 10 years RFID experience
- Scanning RFID over 40M times a year
- Technology investment £3.2M
- Tracking £20M worth assets
- Saving 4.5% of processing labour
RFID success in Healthcare

- RTLS tracking technology most common
- Automated solution
- St Vincents Hospital Alabama, US
- Patient Tracking and Clinical results system
- 6 months from 38 bed pilot to hospital wide
- RFID on patient notes
- 500 Tags with 140 Exciters
- Real time data screens
- Patient discharge 6hrs to 6mins
- 151% ROI in 12 months

Source: RFID Journal, by Jill Gambon
Radianse Technology
What are barriers to RFID adoption

- RFID technology limitations -
  - It must just work in healthcare
  - Metal in the environments
- RFID requires capital investment
  - RFID tags and software
  - Technology integration
- Efficiency savings need careful realisation
  - Supporting management information
- Cultural and privacy issues need careful management
- Solutions need to be is to adopt and self managing
- Clear success criteria and scope
  - Incremental solution and benefit realisation
What innovation can RFID deliver to the operating theatre?
What are opportunities for RFID in the Operating Theatre?

- **Surgical resources and equipment tracking**
  - Surgical Instrumentation, Medical Equipment
  - Medical supplies, People & Patients
- **Increased operating theatre capacity**
  - By reducing patient turnaround times
  - Reduce theatre labour costs per case
- **Optimised equipment & supply logistics**
  - Locate surgical inventory and equipment quickly
  - Verify session assets are in place for surgery
  - Manage and schedule surgical assets 24/7
  - Automate medical consumable tracking
- **Reduce patient risk**
Why is the time right to invest in RFID?

- RFID chip technology advances
  - Sterilisable passive chips miniaturisation
  - RFID on metal surface mount technology
  - UHF RFID chips for better reading
  - Sterilisable active tag technology for RTLS
  - Uses existing Wifi networks reducing costs
  - Medical device validation in place

- RFID chip prices are reducing and becoming more affordable
  - Paper disposable 10p | Sterilisable 50p | Active £80
Surgical instrument counting

- Synergy Health provides instrument processing services to 273 hospitals and PCT's processing 67 Million instruments a year.
- Track the reprocessing of 6 million trays and individual instruments
- Annually our customers and Synergy count 270 million instruments
- Drive innovation in with hospital partners
  - Improve theatre turnaround time
  - Improve scheduling
  - Case cost tracking
  - Reduce patient risk
- How can RFID technology help?
Single Instrument Tracking

- Integrate RFID with tracking software solutions
  - TrakStar is a good example
- Individually marked items tracked through process
  - Track individual instruments to a set
  - Track instruments in peel packs
- Tracking for high risk or value sets
- Effective scanning technology is key
Blended Technology Approach
Single Instrument Tracking

Source: Xerafy

Source: Haldor
Sterilization Guidelines
Delivering on the RFID potential

- RTLS is proven effective healthcare technology
- Technology costs are failing
- New sterilisable and small RFID tags
- Real operating theatre efficiency saving to be realised
  - Theatre turnaround times
  - Improve theatre scheduling
  - Surgical inventory and asset management
- Experienced service partners exist in the marketplace
  - Technology leadership
  - Results driven service expertise
Any questions?
Thank you for listening
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