

RAIN Healthcare Use Cases



RAIN®
RFID

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VISION

Improve the **quality of patient care** by enabling healthcare providers to identify, locate, authenticate, and engage items in our **everyday** world.

MISSION

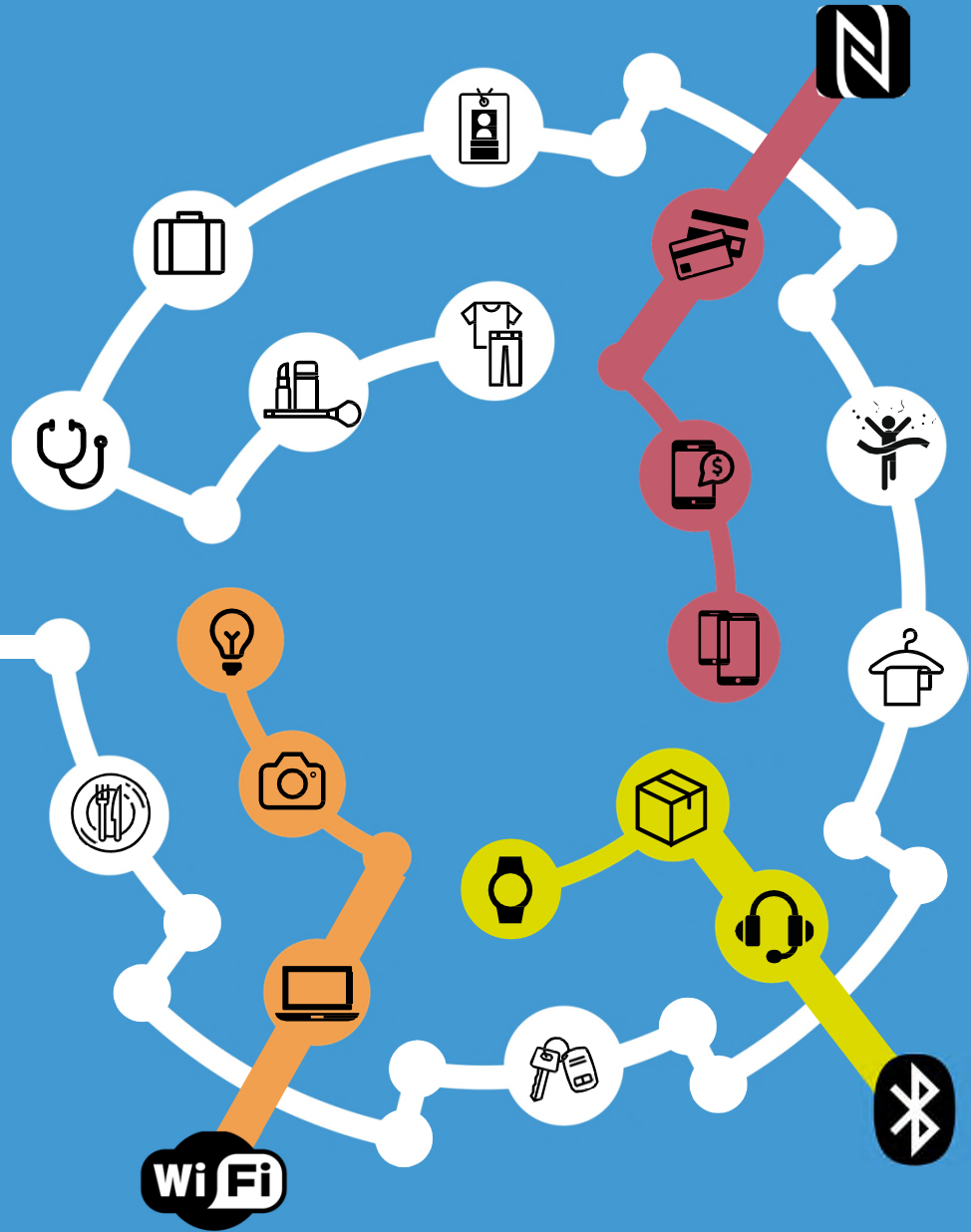
Accelerate the growth and adoption of **RAIN in Healthcare.**



RAIN[®]
RFID

RAIN RFID is a *precise, battery-free, secure and standardized* short and long range radio frequency technology.

It enables businesses and consumers to **identify, locate, authenticate and engage** items in our everyday world.





RAIN[®]
RFID
HEALTH





Asset Tracking and Management

- Asset Management and Optimization
 - RTLS
 - Loss Prevention
 - IT Assets
- Patient File Tracking



Inventory and Supply Management (Inside four walls)

- Pharmacy Automation
- Tissue, Specimen Tracking
- Operating Room Instruments and Supplies
 - Surgical Instrument Tracking
- Consumables



Healthcare Supply Chain Management

- Track and Trace / UDI
 - High Value Medical Device and Implant Tracking
- Distribution Management
 - Consignment Inventory Management
- Drug Supply Chain Security
 - Anti counterfeiting



Patient Care and Experience

- Hand Washing Monitoring
 - Infection Control
- Patient Flow
 - Patient Registration, Admission and Discharge
 - Bed Management
- Disaster Preparedness
- Medical Device Operation
 - Calibration
 - Consumables Authentication
 - Patient Association
 - Safety Mechanisms





Healthcare Supply Chain Management

Assets and Medical supplies in hospital are one of the largest expense
RAIN RFID allows smart and cost effective monitoring and management



Track and trace/ UDI

Distribution management

Drug supply chain security





JADAK Case Study: Validation and Calibration of Medical Device

Problem

- Unauthorized or unsterilized catheters being used on medical testing device
- Different catheters used for different tests on the same medical device require different calibration and settings. Manual selection subject to human error

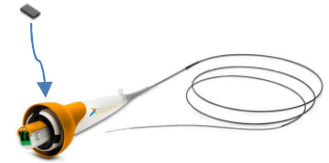
Solution

- Tiny RAIN UHF RFID tag embedded into catheter
- Reader module/antenna embedded into medical device
- Reader verifies authentic/sterilized and type of catheter
- Medical device is calibrated for correct test
- Reader records usage after catheter is used

Benefits

- Protects patients health ensuring use of sterilized catheters
- Prevents counterfeit catheter usage for accurate test results
- Ensures accurate test results
- Protects brand integrity

Murata RAIN tag



ThingMagic
RAIN Nano
module



Enterprise Solution Defined



Encode- Scan – Read – Report from distribution to point of use

Distribution Management



Consigned inventory management use case:

Verified Inventory Program Consignment (VIPIC)
VIPIC solution streamlines inventory management so healthcare providers can worry less about their inventory and spend more time on patient care.



Main benefits :

- Track and receive reports about pedigree and expiry of medication within the pharmacy
- Automate error prone manual tasks
- Optimize inventory levels
- Identify recalled products easily
- Eliminate carrying costs
- Increase staff efficiency
- Enhance patient safety



JADAK Case Study: Tracking Hemophilia Medication

Problem

- Overstocking and expiration of emergency hemophilia medication in home coolers of hemophiliac patients

Solution

- RAIN UHF RFID tag attached to medication
- Reader module/antenna embedded into home cooler
- Reader inventories and reports quantity and expiration of medication in cooler
- RFID-collected data sent to cloud

Benefits

- Protects patients health ensuring correct medication is always available
- Minimizes waste of medication oversupply



ThingMagic
M6e module



Asset Tracking and Management



Medical assets are very costly, therefore must be managed and located meticulously. RAIN RFID allows flawless asset tracking, handling and transportation to the right place and the right time.



Asset tracking and management

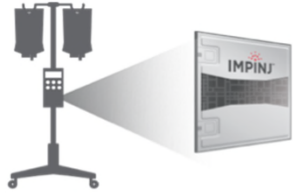
Patient file tracking



Asset Management with RAIN RFID

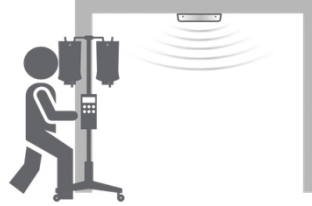


1



Attach Impinj-powered RAIN RFID tags to mobile medical equipment and other assets.

2



Use Impinj readers and gateways installed in doorways, ceilings, rooms or on shelves to wirelessly identify and locate items.

3



Get accurate, real-time data about assets in hospital software systems.

The Aarhus University Hospital



New University Hospital Aarhus Denmark

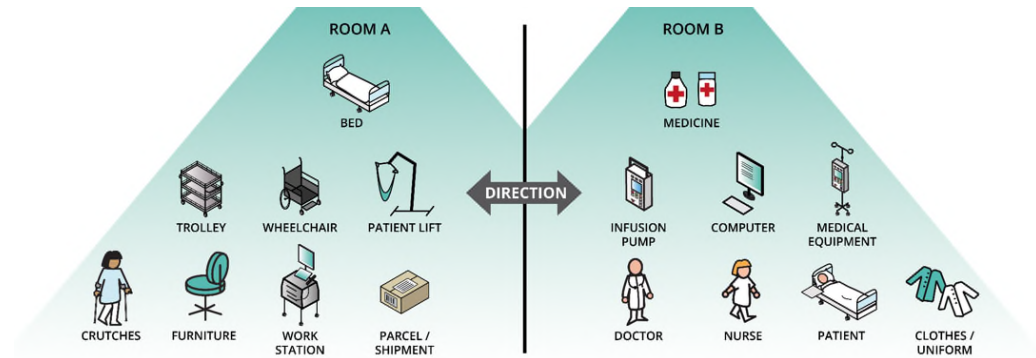


- New generation of super-hospitals
- Covering 500,000 m²/ 124 acres
- Buildings cover 1.25 million m²/ 309 acres
- 100,000 admitted patients and 900,000 outpatients a year at full capacity
- 35,000 daily transports
- 10,000 employees

Scope



- **Systems that automatically register location and identity of a mobile object at a known time**
- **Systems able to consume the above mentioned information**
- **What: eg medical equipment and people**
- **Where: eg room, warehouse**
- **When: eg arrival of bed at room**



Bed Management



Use Case: Find beds that needs cleaning

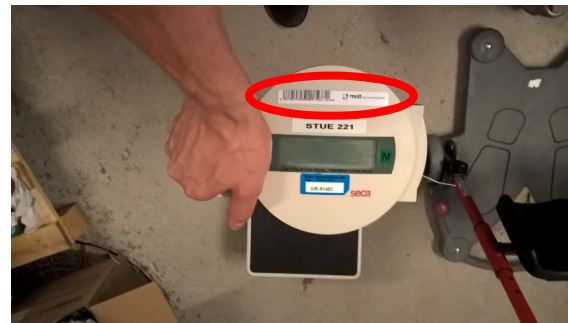
- Bed touch pad at each bed
- Change status of bed immediately,
- 2 way communication



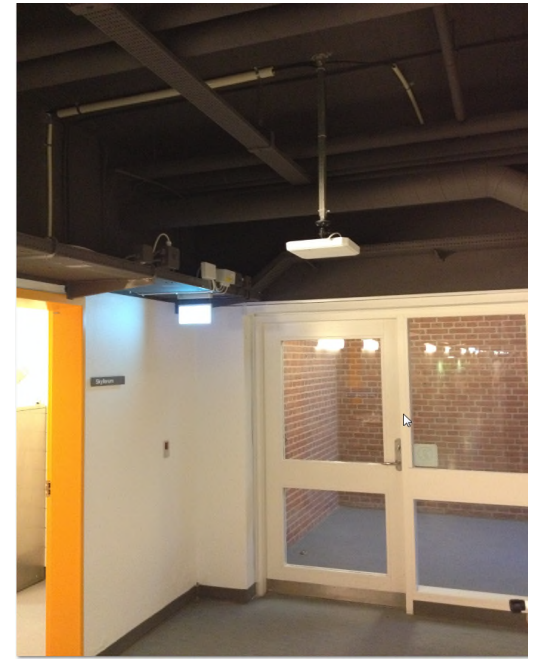
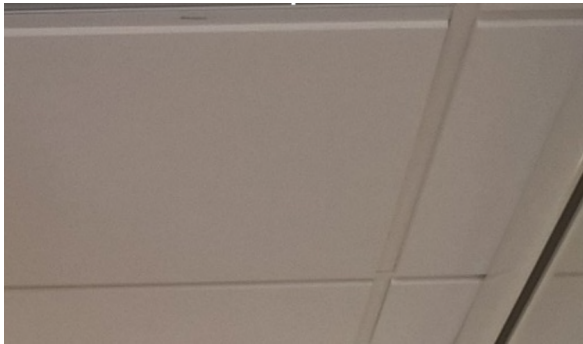
Example of tagged items... so far...



- Trolleys, Staff, Phones, Clinical equipment, Beds, IT equipment, Medical devices, Containers, Vehicles, Bicycles, Art, Clothing, Food...



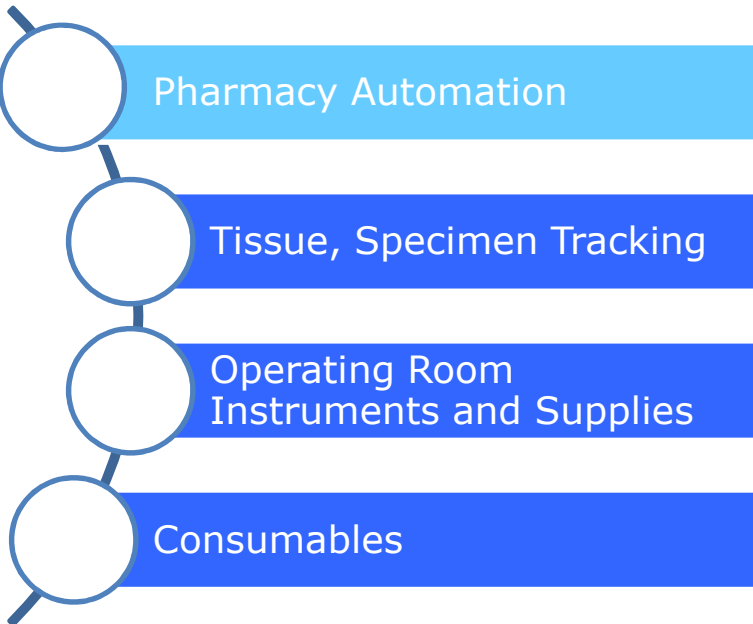
Infrastructure



Inventory and Supply Management



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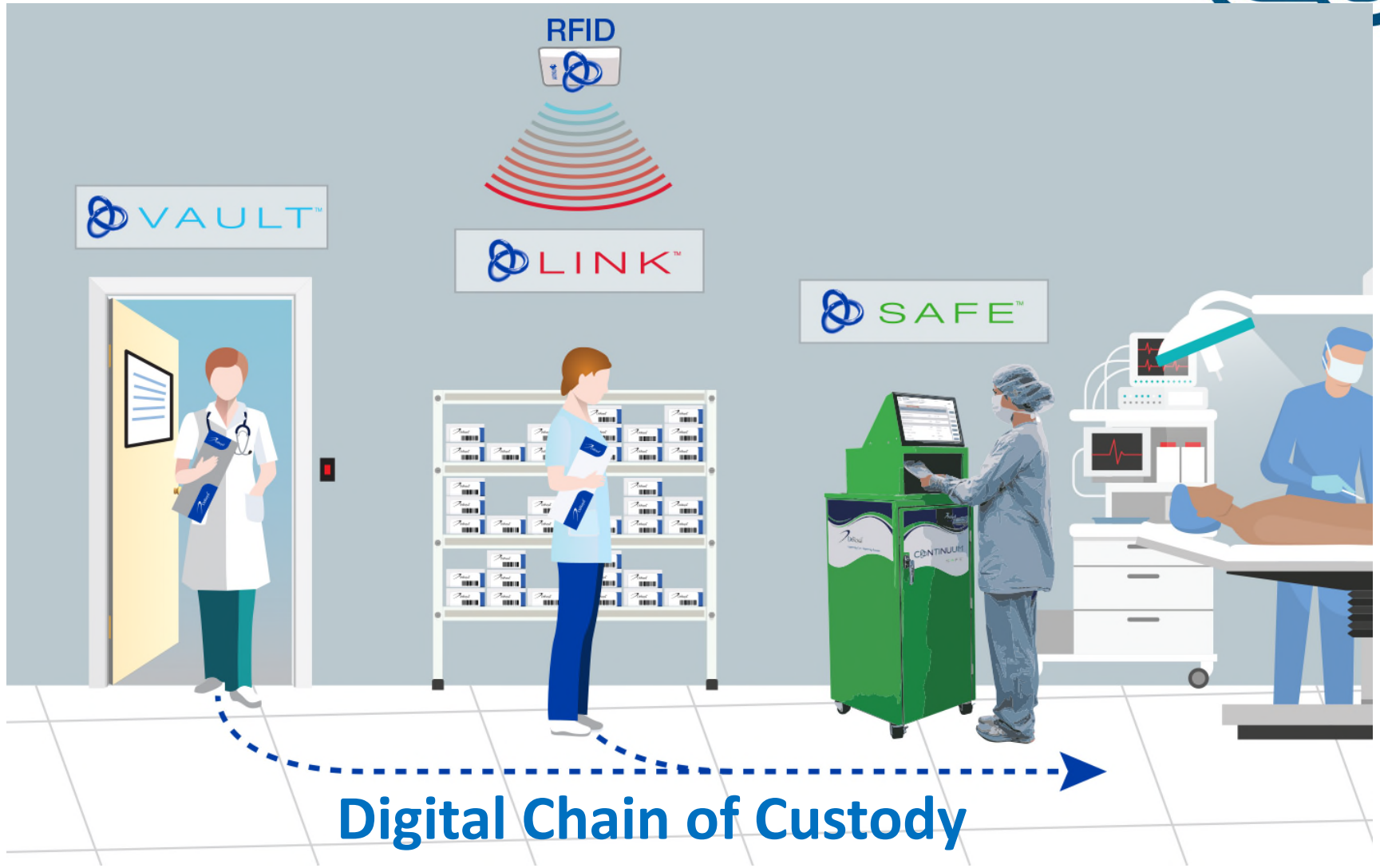
 VAULT



 LINK



 OSCAR™





HEALTHCARE

Product Traceability and Control

More than 2,000 RAIN-enabled / Internet enabled refrigerators deployed for tracking pharmaceuticals and stents / catheters.

1,000,000 items under constant watch via RAIN RFID system.

Interoperable RAIN technology deployed in USA, Europe, and Japan

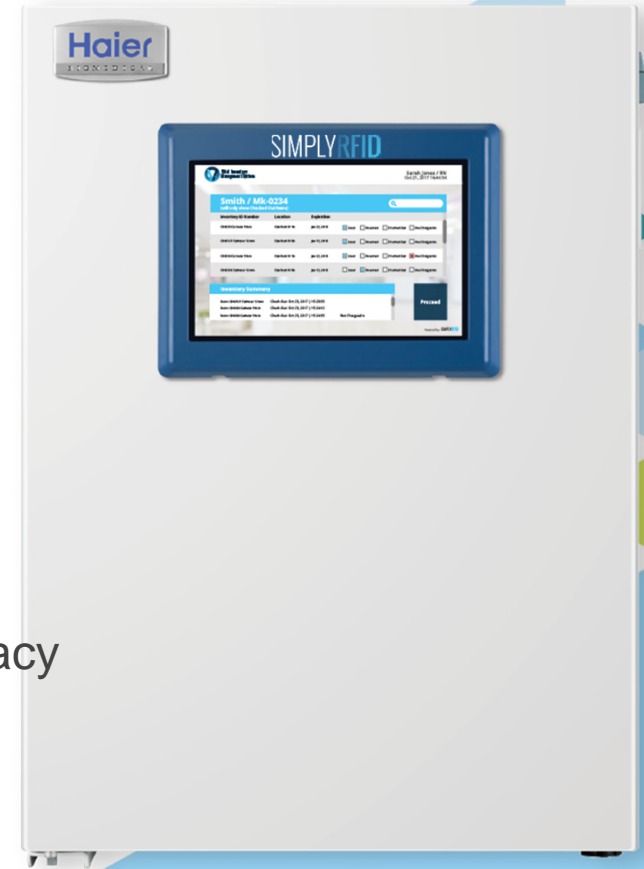


HEALTHCARE

Product Traceability and Control

Primary Benefits:

- Maintain stock levels
- Recalls
- Expiration Tracking
- Access control and log
- Locate rare drugs in hospital / pharmacy
- Maintain drugs at controlled temperature and humidity
- Controlled narcotics storage



Surgical Instrument Tracking



- Automatically track critical equipment
- Ensure the correct sets are available for each surgical procedure
- Improve patient safety



IntelliGuard[®] Pharmacy



- Automates manual workflows
- RFID-Enabled Kit and Tray Processing saves you time and money
- Accurately identifies soon-to-expire medications, expired and or recalled medications...What it is....Where it is
- Provides Visibility and Controls at the item level not available with current methods
- Drives compliance



The Right Drugs,
In the Right Quantities,
When and Where Needed



IntelliGuard[®] Anesthesia

IntelliGuard[®] Anesthesia is the only medication and Controlled Substance inventory solution that works for both Pharmacy and Anesthesia

- **Medication item tracking in the OR, specialty areas of hospitals, as well as surgery centers at the point of use**
- **Utilizes our core RFID technology and ties in to the enterprise model**
- **The only solution designed to integrate into the existing anesthesia work flows**
- **Closed loop management of Controlled Substance from Pharmacy to caregiver through the waste process**



Disruptive technology
that doesn't disrupt



RAIN Smart Cabinets

IntelliGuard® Smart Cabinets monitor critical drug levels and temperature storage conditions. Inventory levels are automatically updated as items are removed or replaced.

- Available in multiple sizes to fit your needs.
- Increased security with access control and real-time visibility to user transactions
- Enable truly effective inventory control from the web-based IntelliGuard® Client Intelligence Portal
- Automated satellite pharmacy for the OR or high volume departments



RFID Technology Puts You In
Control



Enterprise Solution Delivers Control & Visibility



IntelliGuard Pharmacy
Kit and Tray Processing



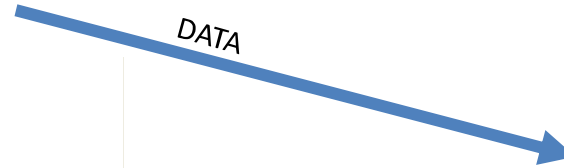
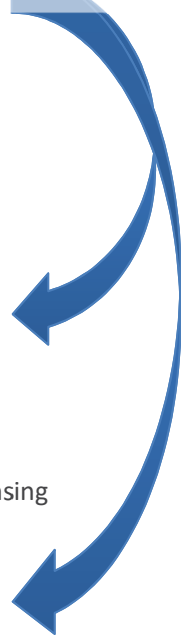
IntelliGuard Smart Cabinet
Controlled Access Cabinets



IntelliGuard OR/Procedure
Remote Medication Dispensing



Items transported to other areas or buildings



IntelliGuard Insights



Data Aggregation & Predictive Analytics Platform

Patient Care and Experience



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Hand Washing Monitoring

Patient Flow

Disaster Preparedness





RAIN in HEALTHCARE

Patient Care and Experience

- **Hand Washing Monitoring**
- **Patient Flow**
- **Disaster Preparedness**

LET IT **RAIN** AND FOLLOW US



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