

EXTRACT

CUSTOMER: São Paulo's Einstein Hospital, Brazil

- **800-bed facility covering 273,000 sqm** across several city blocks with **150 linen storage areas checked 4 times a day**;
- **10 tons of laundry processed daily** by an outsourced facility 50 km away.

ISSUE: very complex linen supply chain: **33 hospital workers** had to **manually** check the stock levels, travelling from one storage site to another 4 times a day, in a **time-consuming process** with **several counting mistakes**.

RFID SOLUTION KEY FEATURES:

- **158'000 linen items** tagged with **Datamars LaundryChips FT401**.
- **Datamars RFID reading systems implemented:** 2 UHF portals, 2 UHF cabinets and 2 UHF handheld readers.
- **Software platform "Smartxhub"**, provided by Datamars' Brazilian partner IDvida IoT, to connect, elaborate and analyse the data provided by the RFID system with the hospital management system.

RESULTS & SAVINGS:

- **Inventory count time reduced by 86%** (from 72 hours to 10 hours)
- **Linen loss rate reduced by 80%** (from 4% to 0.8%)
- **Labor in linen replenishment reduced by 16.5 hours/day** (6,000 hours/year), saving \$30,000 annually
- **Supported 50 new beds without additional staff, adding \$26,000 in annual gains**
- **Misuse reduced by 55%** (from 38,000 to 17,000), saving \$125,000 annually
- **Natural wear and tear reduced by 72%**, saving \$130,000 annually
- **Customer Satisfaction Index significantly improved** due to better availability and quality of linen items.

TOT SAVINGS: \$300'000 per year!



Datamars Laundrychip FT-401 heat-sealed on a linen



Datamars RFID Cabinet

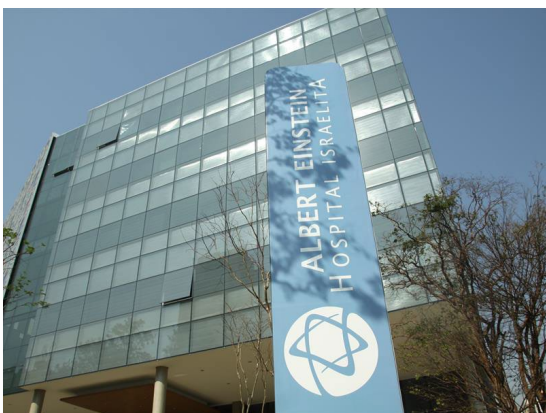
KEY INSIGHT: RFID enabled Einstein Hospital to **reduce linen inventory labor six-fold**, decrease loss rates and improve inventory accuracy. Ranked the **best hospital in Latin America** and among the top 35 globally, it was a finalist for the RFID Journal Awards for **best supply chain**. The hospital's next steps include **expanding RFID to all sites**, integrating with legacy systems, exploring AI applications.

Brazilian hospital tracks 158,000 linens with Datamars RFID tags, saving \$300,000 yearly.

RFID technology enables Albert Einstein Hospital to track when the linens are used, laundered and returned to storage areas to ensure adequate stock and efficient replenishment in a fraction of the time required with the manual system, saving approximately \$300,000 yearly.



Albert Einstein Hospital facilities, Unidade Morumbi



Albert Einstein Hospital facilities, Unidade Perdizes



Albert Einstein Hospital's room

Albert Einstein Hospital key numbers:

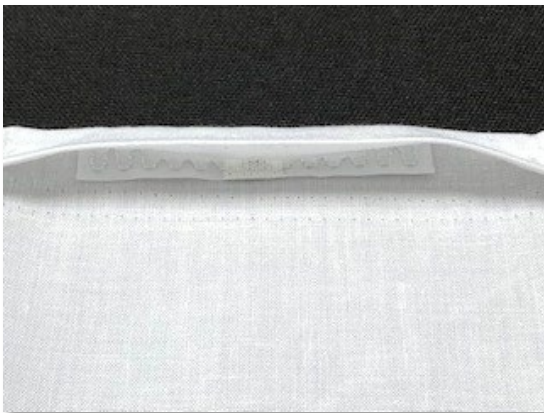
- Established in 1971 and located in Sao Paulo, Brazil, is an 800-bed healthcare facility, covering 273,000 sqm across several city blocks.
- To help serve the thousands of patients that are treated at the busy hospital, 150 points of linen storage are replenished 4 times a day, involving in the linen counting manual process 33 people.
- Each storage area has a minimum stock requirement. During morning shifts, the quantity of bed sheets and pillowcases is higher, while another minimum level is set for evenings.
- Among the 158,000 linen items there are about 35 categories of sizes and models.
- 10ton of textiles washed every day
- 17.000 cleaned pieces received every day
- 15.000 items replenished every day.

Issue to solve: Due to the size of the hospital complex and the continuously expanding number of storage areas, the hospital staff previously had to travel from one site to another, several times a day, to manually check the stock levels in a time-consuming process, with also a high rate of counting errors.

Additionally, all laundry is washed at an external and outsourced laundry facility about 50 kilometers away from the hospital, making the entire linens supply chain that much more complex.



Datamars Laundrychip FT-401 heat-sealed on a linen



Datamars Laundrychip FT-401 sewn into a linen hem (hem opened)



Datamars Laundrychip FT-401 sewn into a linen hem (hem closed)

The RFID Solution: The hospital looked to RFID technology to improve the logistical flow of linens as they go to from patient to cleaning, and back to storage for reuse.

They began using the RFID technology in the second half of 2022.

Linens and bedding suppliers are tagging goods that go to the hospital with Datamars UHF RFID tags (FT-401). The tag is encoded with a unique ID that is linked to that item in the hospital's software platform "Smartxhub", provided by Datamars' esteemed Brazilian partner IDvida IoT.

"Whenever we purchase a new item of bedding, we provide our RFID tags for the manufacturers to apply to the material and deliver it to us, ready for use," explained Renata Santos, the hospital's linen coordinator.

When clean linens come —laundered and folded—to the hospital from the external laundry site—they pass through an RFID portal reader that captures all tags as they enter. The software provides data related to which cabinets require replenishing, and what stock is available on-hand at that receiving "laundry room."

The linens are then routed to the necessary cabinets based on the supply counts provided by the software. As the cabinet is replenished, staff members read all tags there with a handheld reader. Users can view a display of the replenishment counting results.

After the linens are used and routed back to the laundry room, they pass out the door through the RFID portal again to update their status, as they go to the external laundry service.

Hospital team members can access the supply data and then assemble replenishment cards (written orders) based on what was detected at each cabinet.

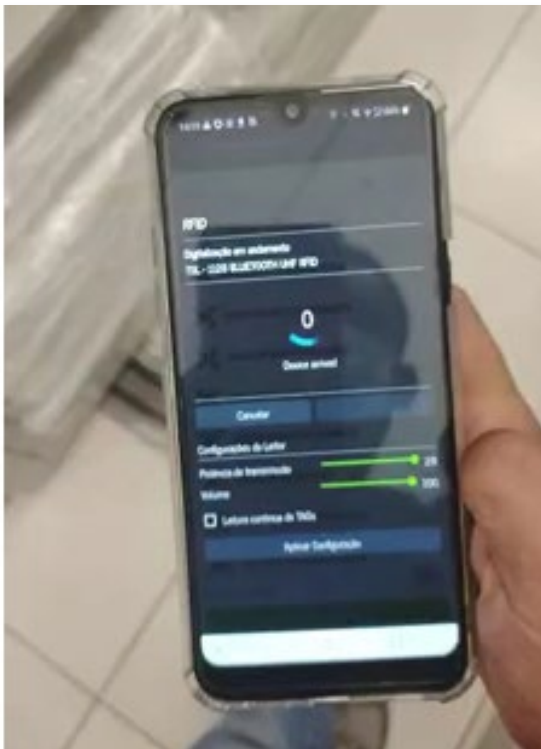


Datamars RFID Cabinet

“For each new replenishment, we need to scan the location with the RFID reader so that the system can generate the replenishment requirement based on the minimum stock information that should be available at the location,” said Rafael Vitolo, the hospital’s RFID project leader.

The hospital staff employs 12 portable RFID readers, each with a Bluetooth link to a smartphone. The hospital has deployed two Datamars RFID cabinets with readers for real-time data at the busiest sites. When items are removed from the cabinet, the inventory count is automatically updated.

The SmartxHub data includes not only middleware for interpreting RFID tag readings, but a Smart Hub App and Smart Hub Web so that users can view the data online or on their phone.



TSL portable RFID reader

Savings and results:

Since the system went live, the hospital has measured the following results:

- Inventory count time reduced from 72 hours to 10 hours (86% less) for each full inventory count performed every two months.
- Linen loss rate reduced from 4% to 0.8% (80% less) of total linen volume.
- Time to count replacement items reduced from 7 minutes to 1 minute.
- Time to start assembling the replenishment cart reduced from 50 to 5 min.
- Workday reduced by 30 minutes for each linen supply worker in the replenishment process = 16.5 hours per day reduced = 6,000 hours per year = \$30,000 annual savings.
- Organic growth of 50 new beds with the same team = extra gain of \$26,000 annually.
- Reduce misuse from 38,000 to 17,000 = estimated annual gain of \$125,000.
- Estimated 72% reduction in natural wear and tear = Estimated annual gain of \$130,000.



One of the Albert Einstein Hospital's linen storage area

- Estimated 12% reduction in water consumption at the off-site laundry facility, saving 8 million liters and 139,000 kilowatt-hours of electricity per year.
- Reduced carbon emissions by an estimated 31 metric tons.
- Customer Satisfaction Index increased due to improvements in availability and quality of linen items.



Datamars RFID Portal

Conclusion: Sao Paulo Brazil's Einstein Hospital has cut linen inventory labor six-fold, by tracking all 158,000 bedding items used in patient care with an RFID solution.

The technology has helped the hospital reduce the rate of loss, as well as increase inventory accuracy. Considered the best hospital in Latin America and among the top 35 in the world, Hospital Albert Einstein has been also a finalist in RFID journal live awards for best supply chain or logistics implementation.

According to hospital's top managers, the next steps in the implementation of RFID will be to extend it to all hospital sites, develop new integrations with legacy systems and take advantage of the new machine learning and artificial intelligence applications.



Hospital Albert Einstein at the RFID journal live awards 2023