

RFID (Radio Frequency Identification) The solution for Vein-to-Vein traceability

Dr. Samra Suhaib, Satish Kumar, Dr. Libin K Babu

Problem Statement:

- The absence of a seamless tracking system hinders verification of blood unit delivery to the correct patient within the right timeframe.
- Manual interventions increase man hours which accounted for about 1134 hours per year elevating the risk of errors in the blood management process.
- Lack of product identification and real-time tracking leads to suboptimal inventory control.

Rationale:

- Radio Frequency Identification (RFID) - unique identification based on electromagnetic radio waves
- RFID Tag applied to the blood bag → product identification since donation till end of transfusion (Vein to Vein)
- Transparency, patient safety, and productivity justify the development efforts in RFID

Method

Poor inventory with no product identification

Poor Storage and transport monitoring

Inability to know if unit reached the right patient and transfused within appropriate time

Blood Safety
Protocols

Increased man hours

Delay in issuing correct crossmatched units

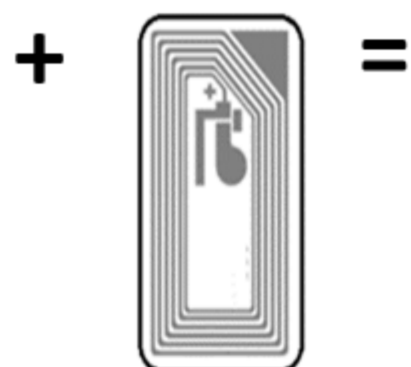
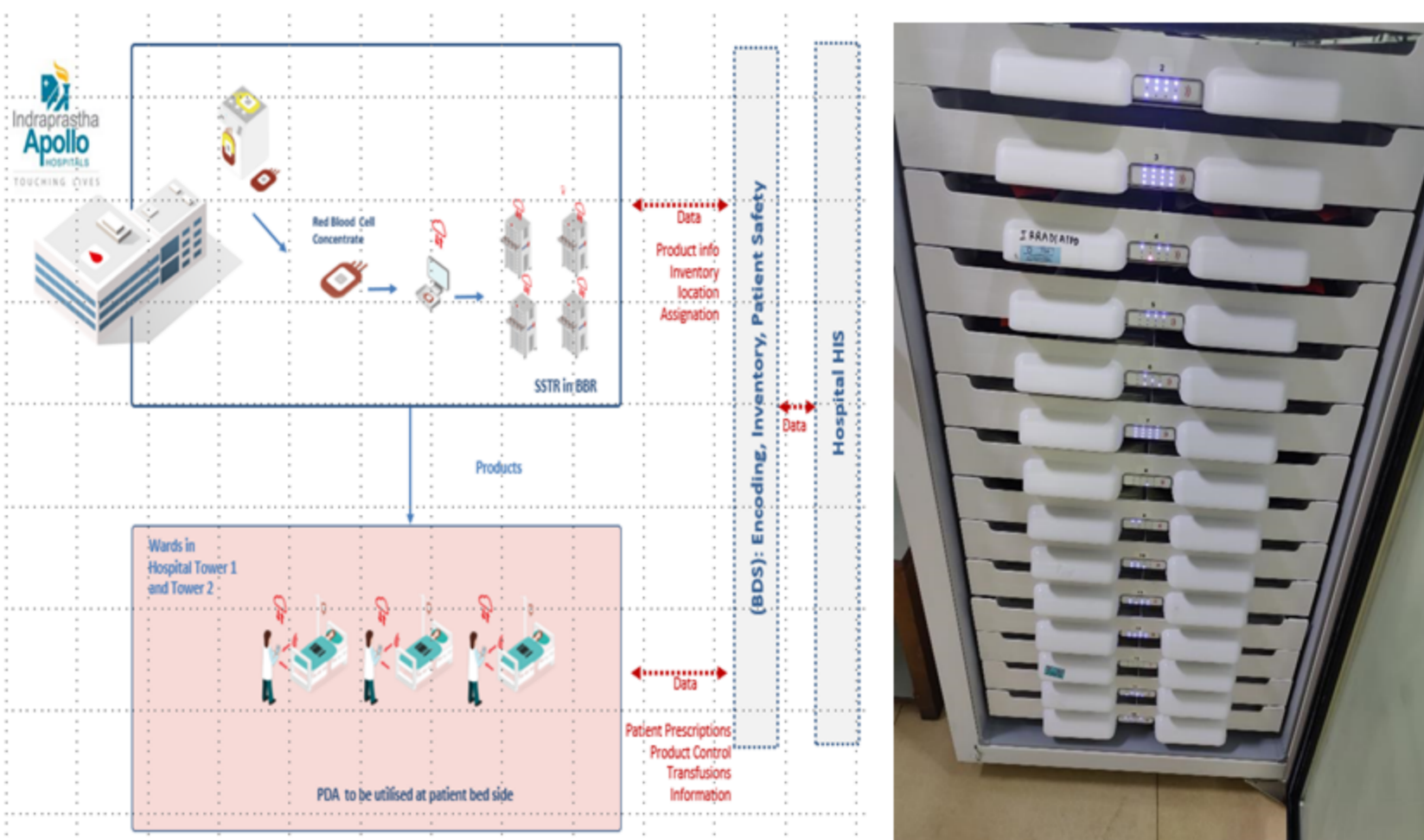
Delay in locating a unit

Delay in blood transport

Man

Goal:

To improve patient blood safety including identification and transfusion by incorporating RFID technology



What did we do?

A multidisciplinary team worked with the vendor to make a basic plan of process flow

Necessary consumables, instruments, digital requirements installed and detailed informative practical training given to the blood centre personnel and Nursing staff

Pilot phase

RFID tagging was initiated in Packed Red Cells (PRC) units The Thalassemia ward was the first to receive RFID tagged PRC units

Deployment phase

Subsequently, RFID was implemented at Day care, Oncology, BMT unit and other wards/ICU

Tangible benefits

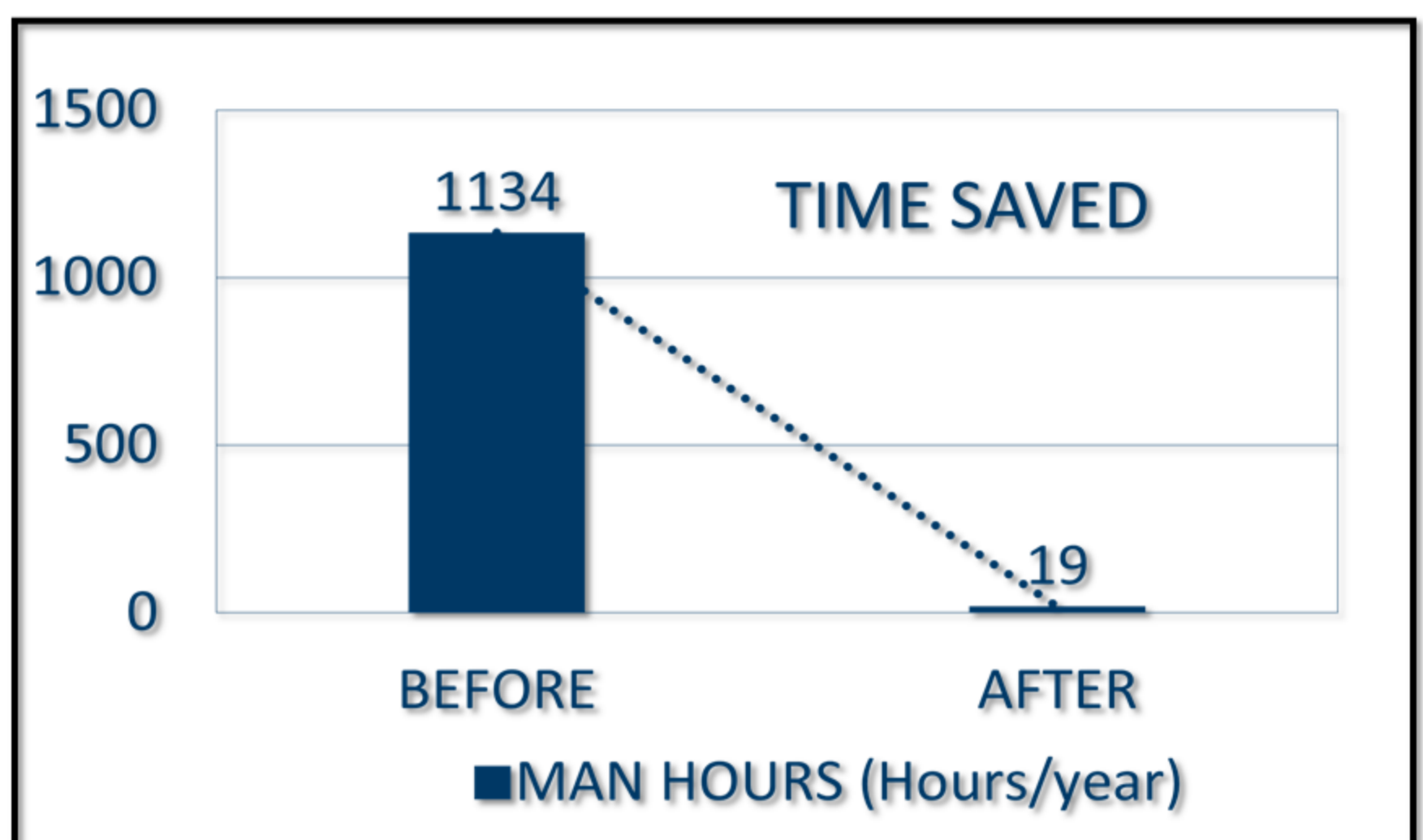
Identification: Correct component to correct patient → Patient blood safety maintained

Data storage: Digital data can be accurately reproduced and checked → Reduces manual errors

Bulk reading: Easy, quick and correct identification → Saves man-hours

Location: Real time tracking of blood components since its preparation to its disposal

Process management and Real-time alerts: Delay in beginning or end of transfusion, reaction alerts during transfusion



Sustainability:

Support: Blood bank personnel, nursing staff, members of the marketing team, Quality team, Biomedical team

Maintenance: A continued team effort is important to maintain patient blood safety in the premises.

Compliance to RFID Adoption

