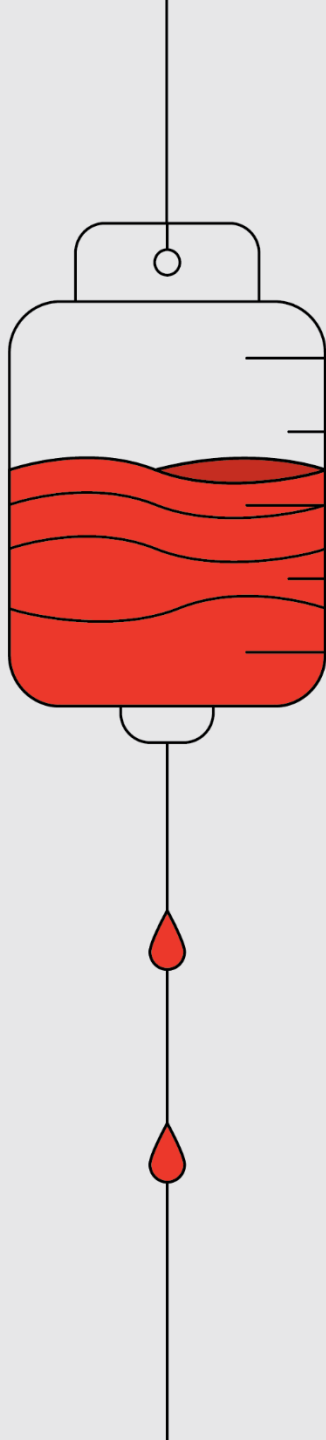




**36th South African
NATIONAL BLOOD
Transfusion Congress**

22 – 25 August 2022 - Durban

SHAPING A SUSTAINABLE FUTURE



The impact of introduction of Electronic Crossmatch in SANBS Blood bank

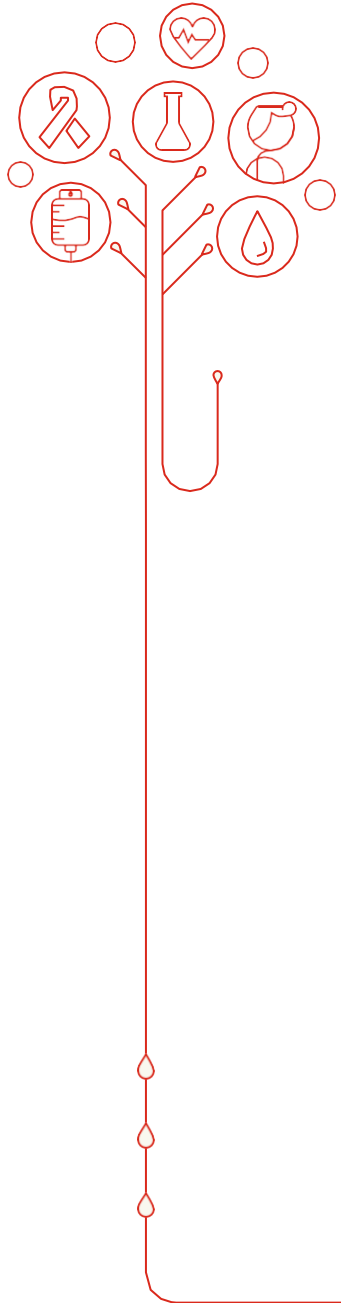
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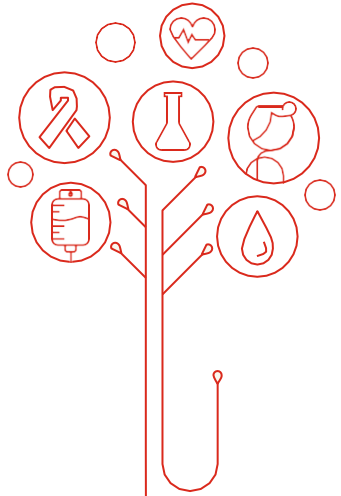


Background

In 2016 Automation was introduced in all 84 Blood Banks in SANBS. Initially SANBS did a full Serological IAT crossmatch on the Automated instruments. This method was time consuming and impacted severely on Turn Around Times, before the units could be issued to the patient. The IAT Crossmatch was also very expensive because it required IAT crossmatch on every unit issued.

What is Electronic Crossmatch (EXM): Is where the computer system uses logic to determine compatibility. Safety is ensured by computer controls in the transfusion laboratory.





Design and Methodology



Validations

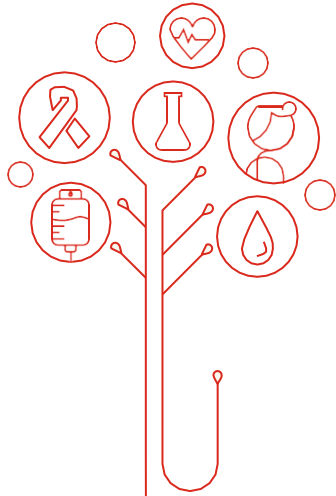
A SOP was developed.

Changes to Meditech was made and was validated on the test system.

Rustenburg blood - validation of the SOP and Software changes in the live system.

Once the Electronic Crossmatch was fully operational at the Rustenburg blood bank, then electronic crossmatch was systematically implemented at the other blood banks.

Verifications were performed in the 84 Blood banks before electronic crossmatch was finally implemented.

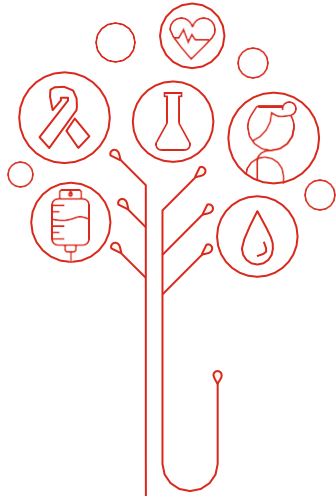


Design and Methodology continue..



International Methodology

1. Two Patient specimens collected on separate times and dates.
2. Electronic crossmatches only on the second request for Blood (ABO previously confirmed).
3. One sample performing the ABO group using two different methods and two different clones of reagents.



Design and Methodology continue..



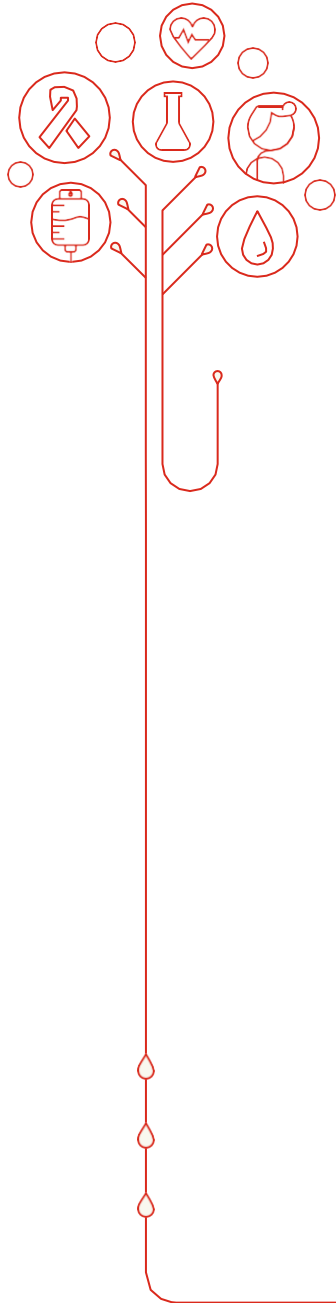
SANBS Methodology

Two identical groups on the same sample.

- First ABO/Rh is performed manually and entered into computer System.
- A second ABO/Rh is performed on automated platform and sent via the interface (Preferably by a second person).

Two identical groups one on the in-house sample matching the historic blood group.

- One group performed on the automated instrument and sent via the interface, matching previous History group.



Design and Methodology continue..

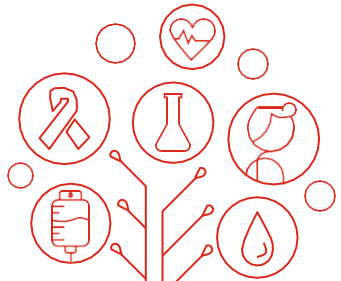
Software Exclusions of EXM

The IT System flags individual patients as unsuitable for the electronic crossmatch if:

- Patient ABO/Rh discrepancies between current group and History group.
- Discrepancies between the Automated ABO/Rh group and manual group.
- Patients with clinically significant antibodies – whether in the current sample or historically.
- Neonates with maternal IgG antibodies present.
- Patients with a positive Direct Antiglobulin Test (DAT)
- Patients that had an incompatible solid organ transplant.
- Computer system is offline and results not interfaced.

There are some diagnosis that exclude patient for being eligible for electronic crossmatch.

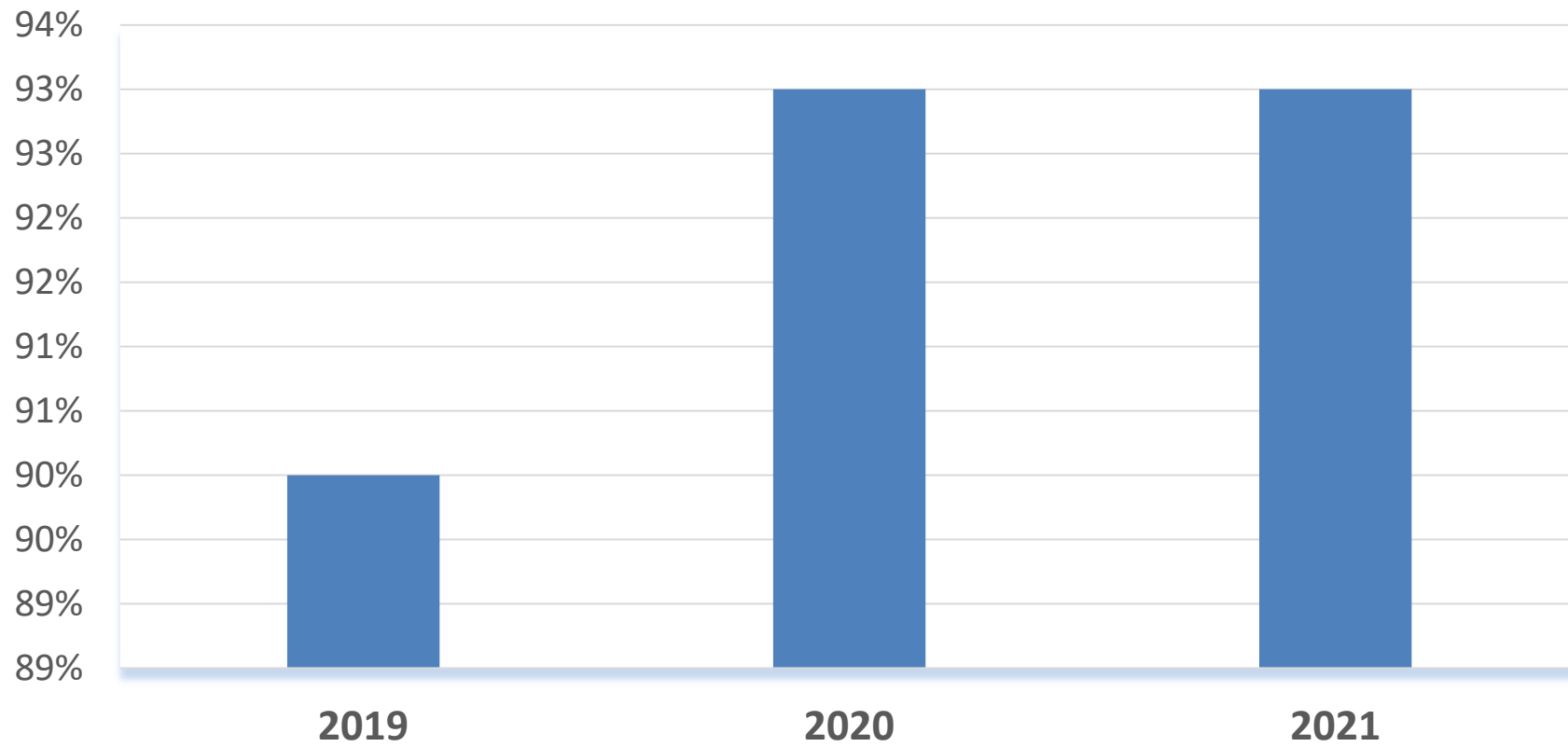


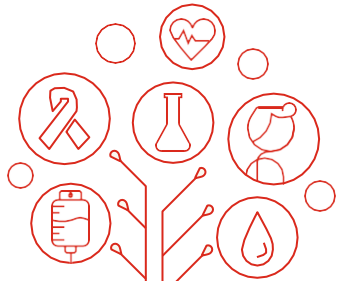


RESULTS



% of Cases done by Electronic Crossmatch

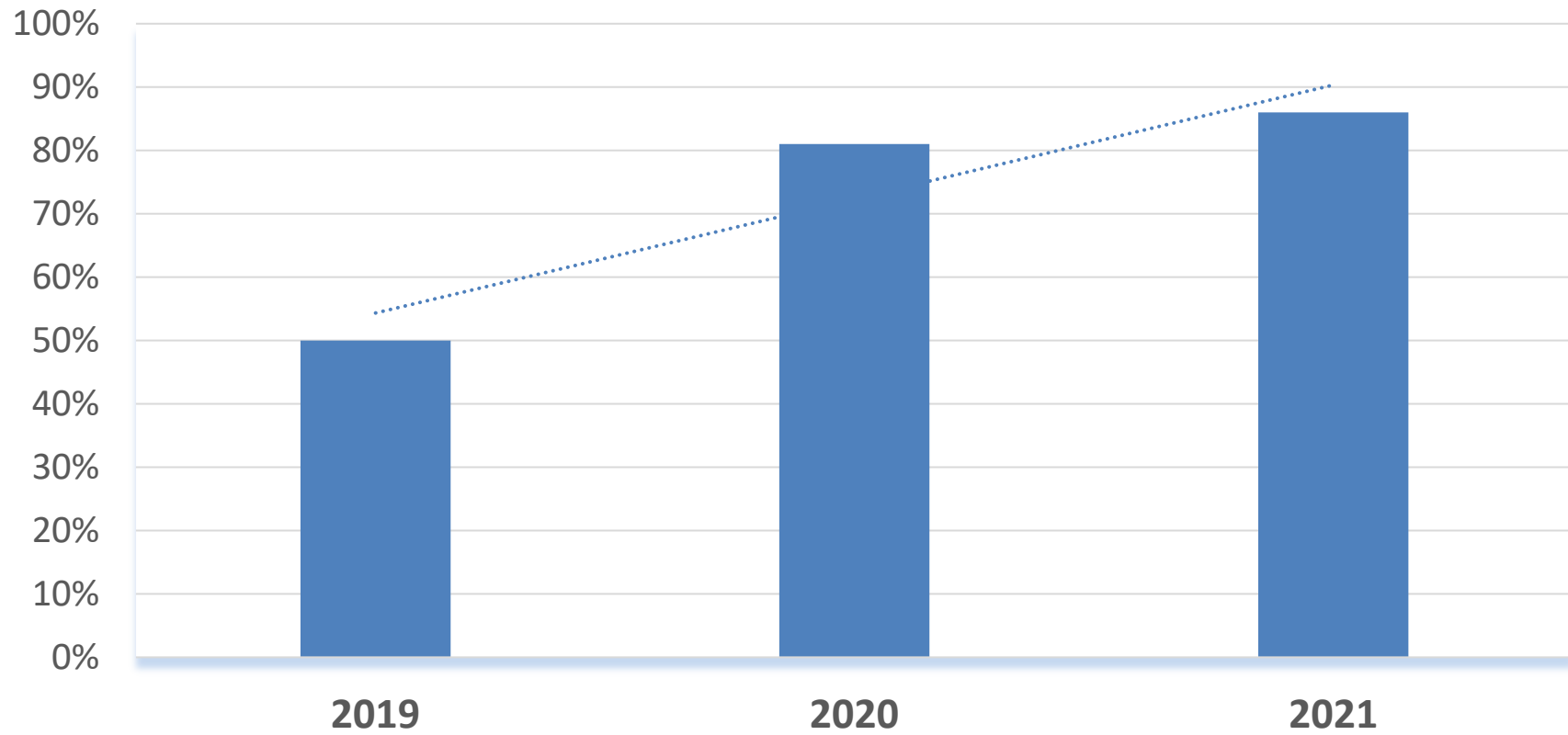


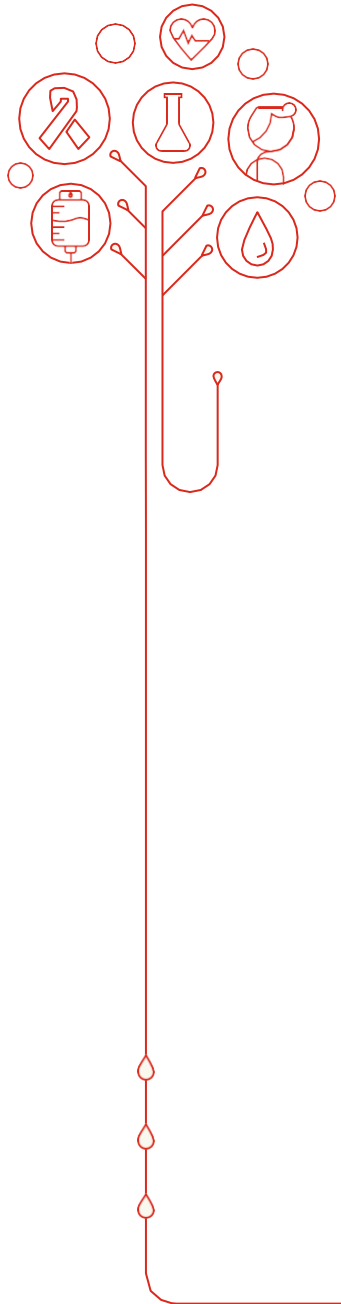


RESULTS

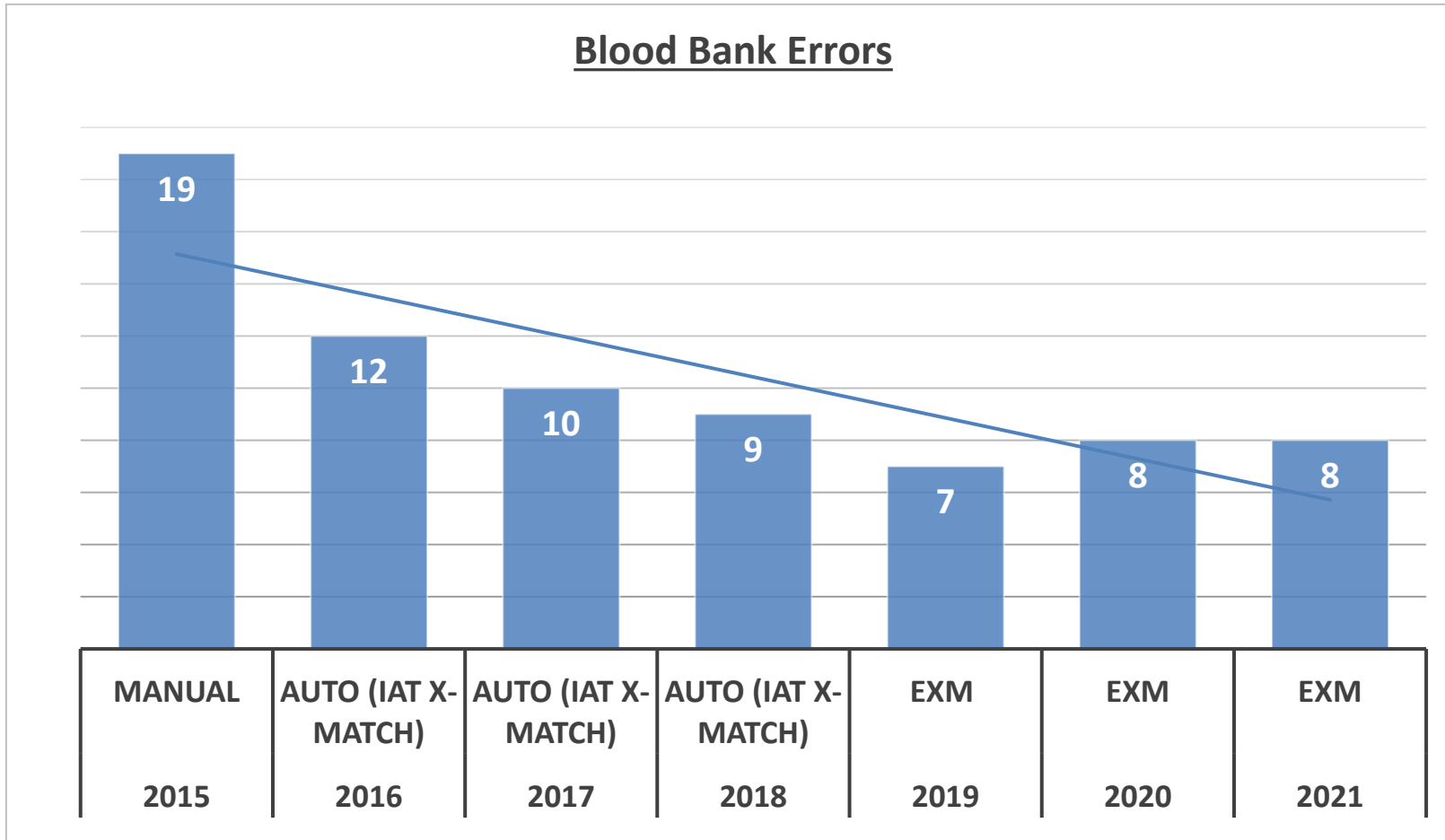


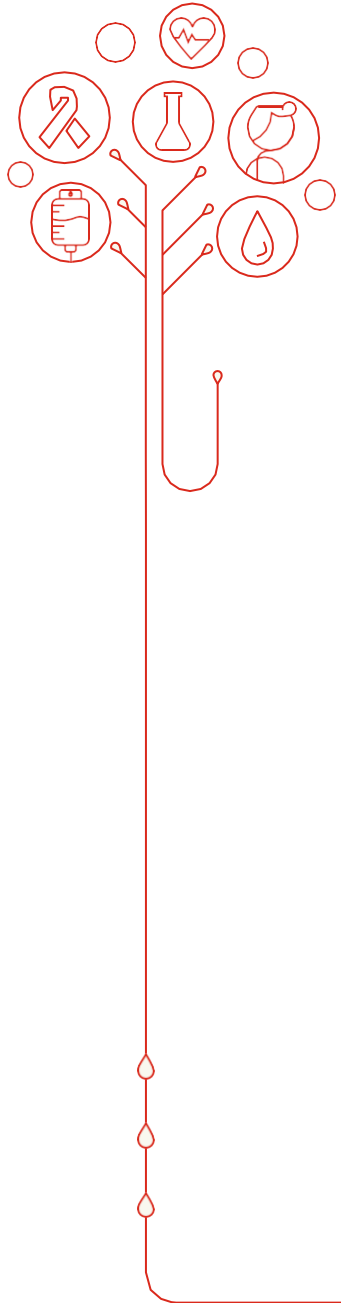
% of Crosmatches within Turnaround Time





RESULTS



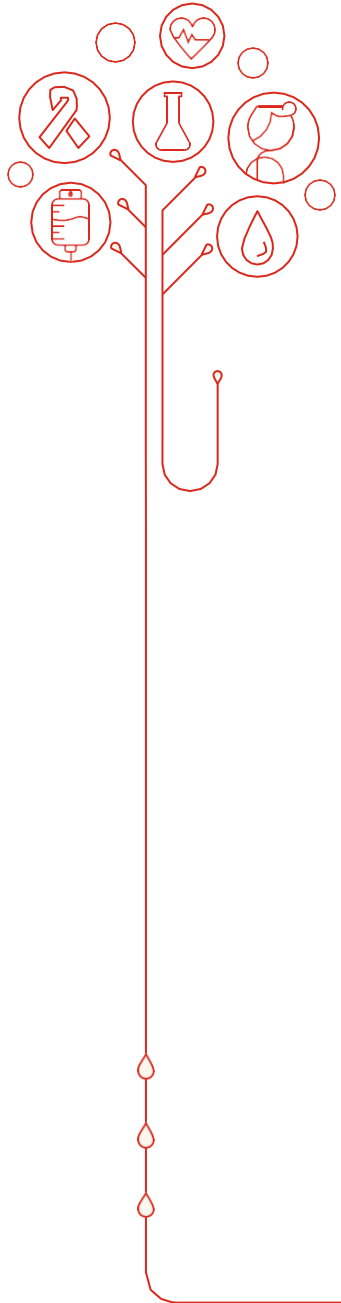


Discussion



The introduction of the EXM (Electronic crossmatch) had a a major benefit for patient, where we have seen the Turn Around Time (TAT) of standard crossmatches within the target of 90% - improve from 43% in 2017 when SANBS still used the Automated IAT crossmatch to 83% with the EXM.

There has been a significant cost saving with IAT crossmatch not performed on each case. Though we still having errors mostly being administration errors but the blood bank error rate is continuously decreasing compared to when manual was used.



Conclusion



Automation is bringing lots of innovation within SANBS and the introduction of EXM opened up the opportunity for remote issuing of units from the smart fridge which is currently being validated.



Thank you