Achieving 100% Automatic Results Transmission of i-STAT Testing

Singapore Healthcare Management 2018
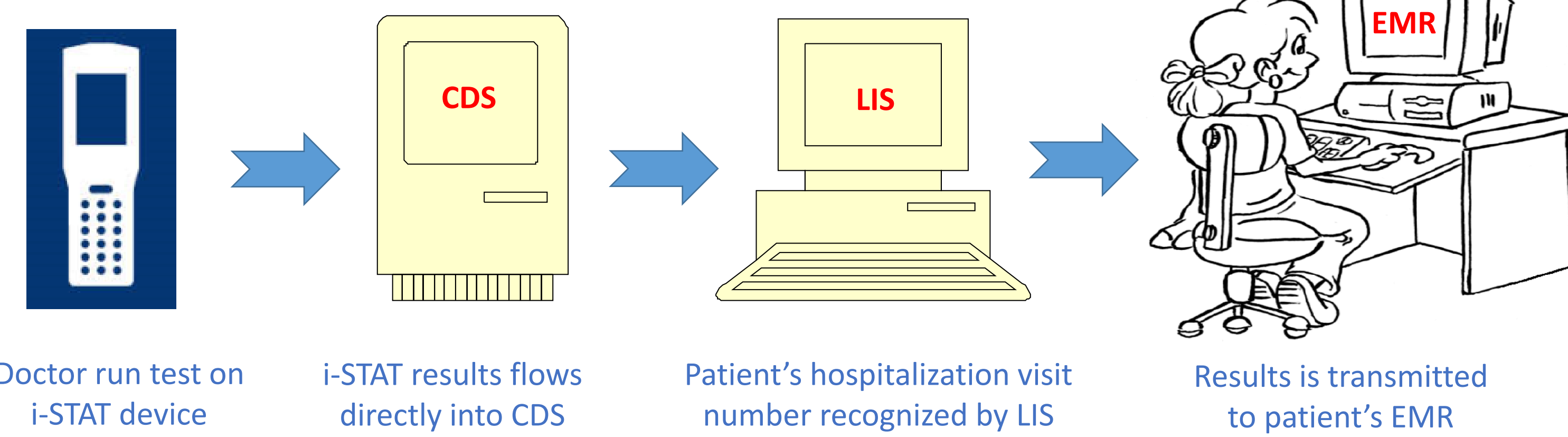
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Introduction

i-STAT is a point-of-care testing (POCT) device used in both Accident and Emergency (A&E) and Major Operating Theatre (MOT) locations to provide rapid blood test results. Transmission of i-STAT results to Electronic Medical Record (EMR) relies on patient's hospitalisation visit number which flow through the Central Data Station (CDS) and then recognized by the Laboratory Information System (LIS). Hence, cases whereby users enter other forms of patient ID were deemed as "invalid ID" by CDS and could not flow to EMR.

This affects patient's safety due to the delay in results transmission. Thus, we targeted to achieve 100% automatic results transmission by December 2016.

| Doctor run test on i-STAT device | i-STAT results flows directly into CDS | Patient's hospitalization visit number recognized by LIS | Results is transmitted to patient's EMR |

Objectives

- Achieve 100% Automatic Results Transmission of i-STAT testing
- Ensure proper i-STAT testing procedure
- Reduce risk to patient safety

Methodology

February 2016

POCT workgroup formed within the Clinical Laboratory
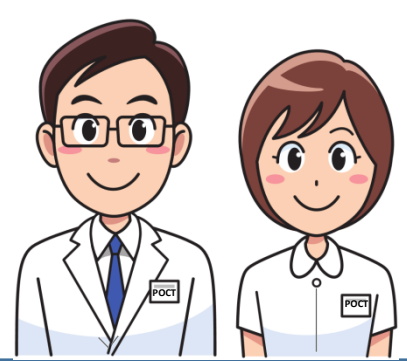
The **POCT Workgroup** functions as a coordinator between users and vendor and assists them with troubleshooting, monitoring Quality Controls (QC) and proper transmission of patients' results.

July 2016

User Training made mandatory to all new and existing i-STAT users

From July 2016, **User Training** sessions which highlights proper i-STAT testing procedures were arranged and made mandatory to all existing and new users prior to utilising the device. Competency was assessed through a quiz and practical session at the end of each training session. A minimum score of 80% is required for certification. Certified users need to undergo **Annual Competency**.

**October 2016**

i-STAT User and Patient ID restriction implemented

i-STAT User Restriction was implemented in October 2016. Only certified trained users who passed the competency test will have their operator IDs registered in the CDS and allowed to proceed with i-STAT testing.

In addition, **Patient ID Restriction** was also implemented which only allowed valid hospitalisation visit numbers to be used as patient ID.

Results

100% Automatic Results Transmission of i-STAT testing achieved!
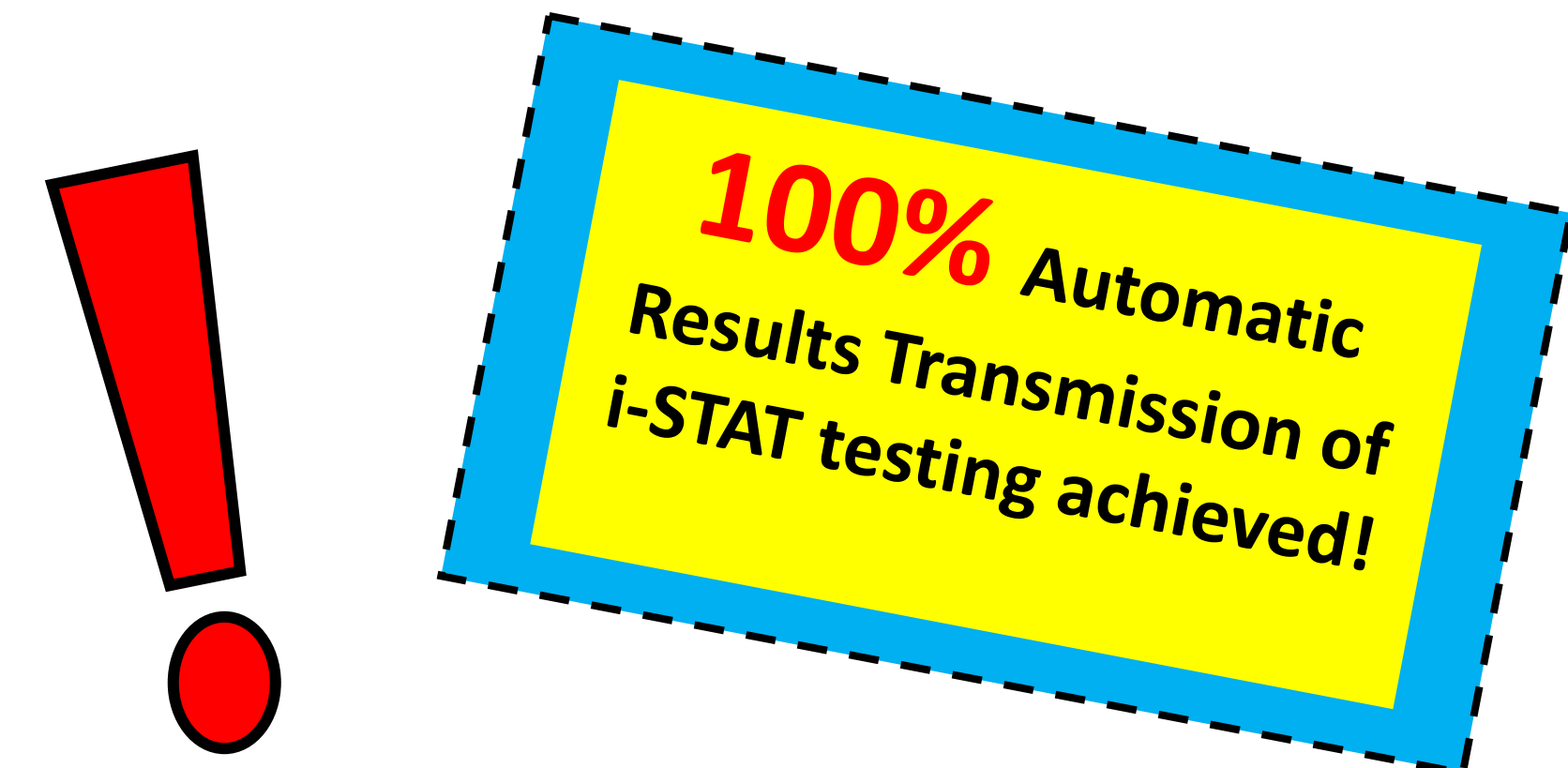
Results transmission for A&E and MOT were monitored daily and 100% automatic results transmission was achieved in both locations by November 2016 (Fig. 1 & 2).

Mandatory user training and implementation of User and Patient ID restriction proved to be effective in achieving 100% successful automatic results transmission. Hence, the risks on compromising patient safety due to delayed results transmission and improper testing procedures were reduced.
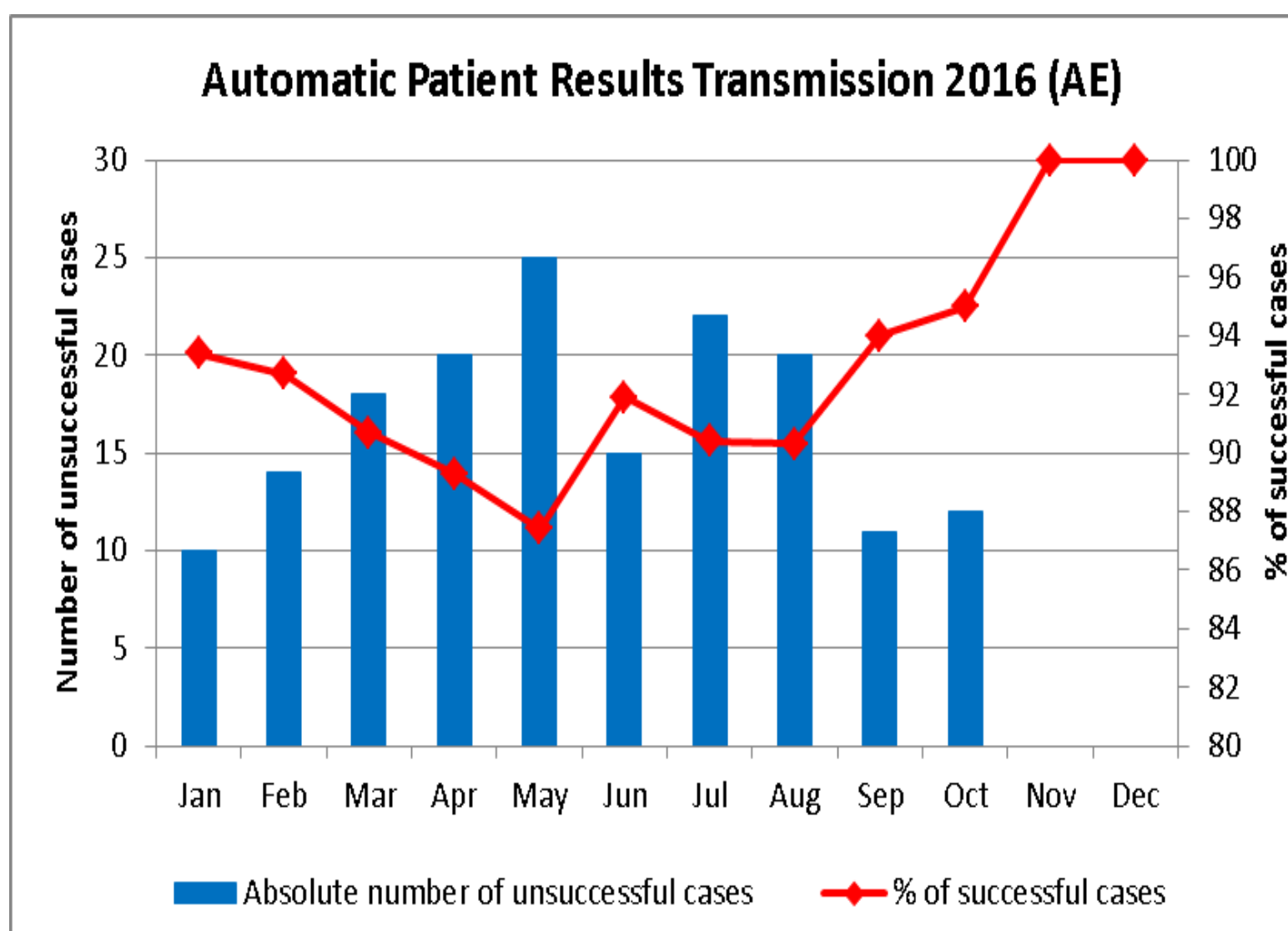

Fig 1. Graph showing number of unsuccessful i-STAT cases (bar chart) and the percentage of successful i-STAT cases (line graph) for A&E for the year 2016
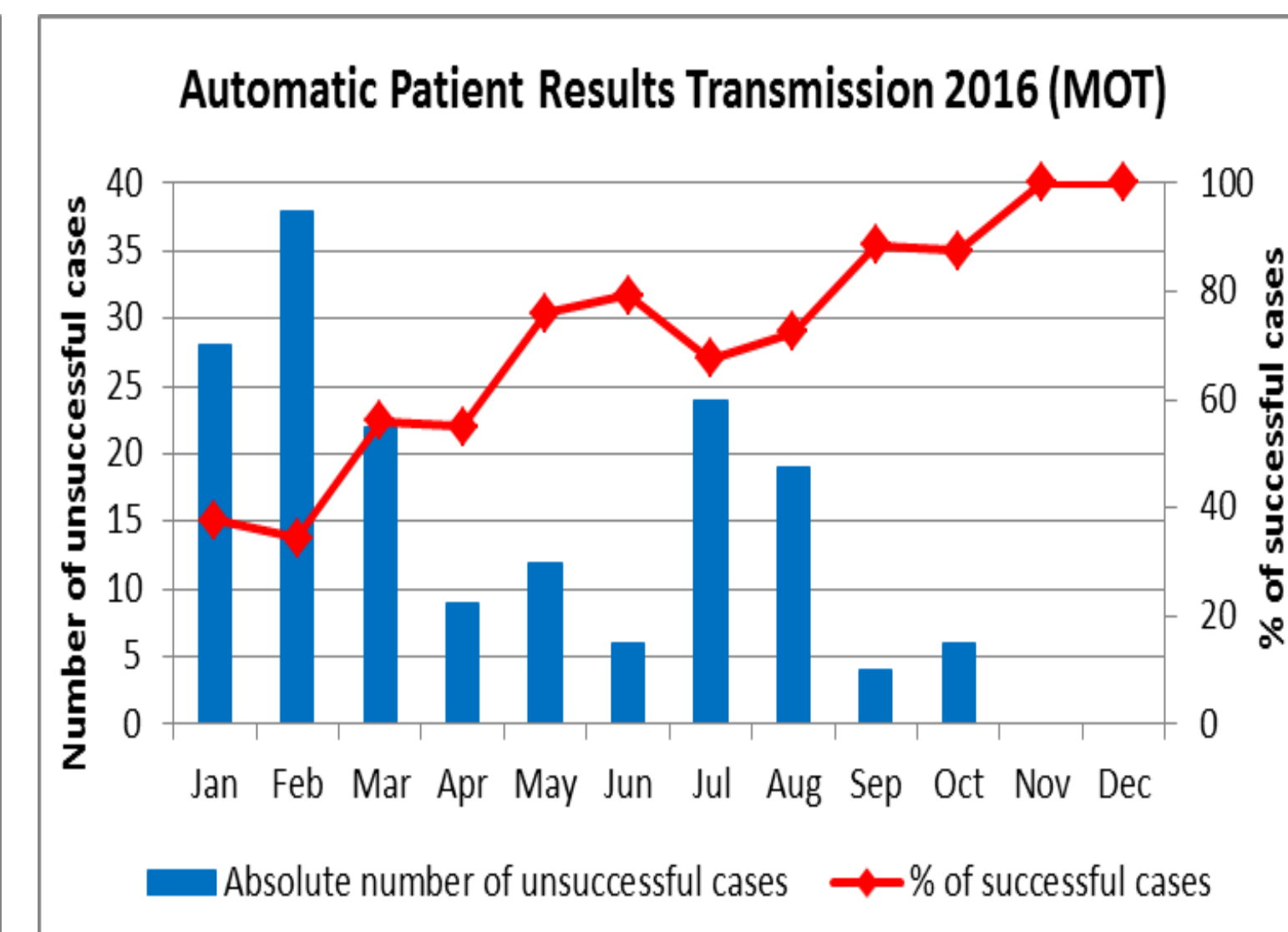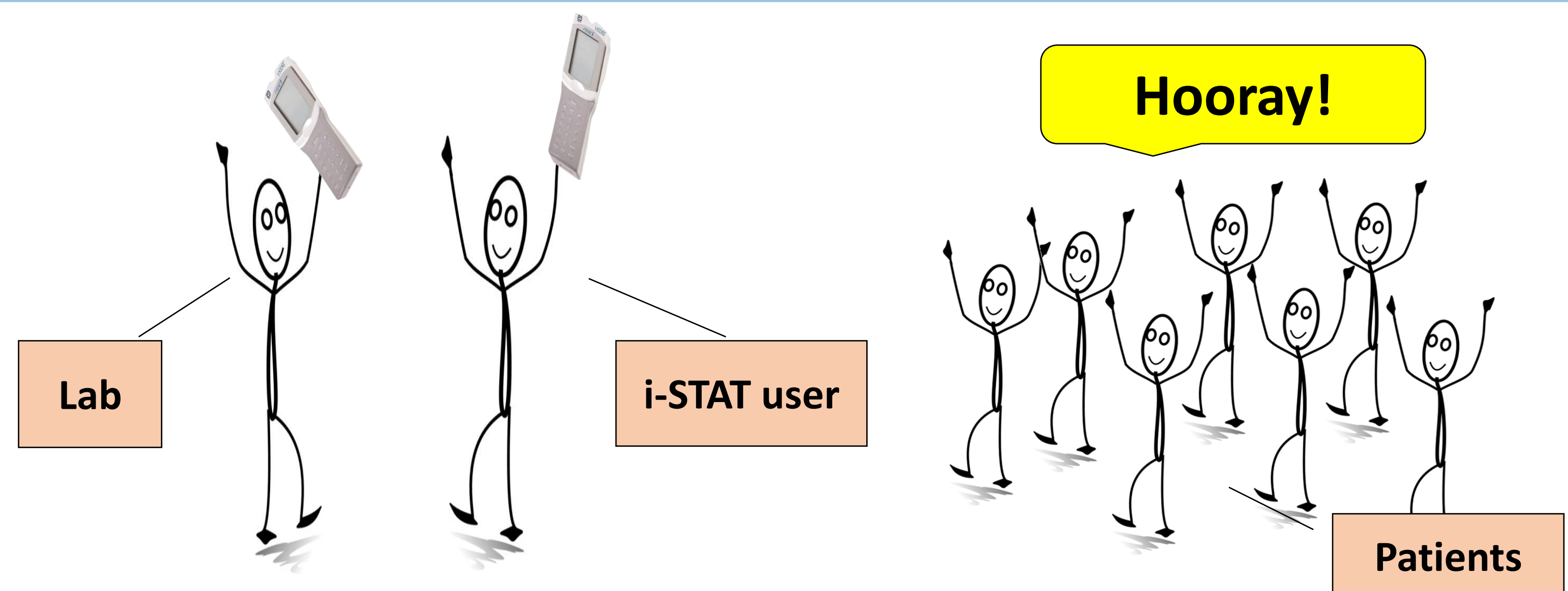

Fig 2. Graph showing number of unsuccessful i-STAT cases (bar chart) and the percentage of successful i-STAT cases (line graph) for MOT for the year 2016

Conclusion

Lab

i-STAT user

Hooray!

Patients

With mandatory user training sessions and annual competency, coupled with implementation of restriction systems, we have **achieved 100% automatic patient results transmission** to EMR by December 2016. These measures significantly decreased the risk of compromising patient safety. The team is also continuously monitoring the process to ensure sustainability. User compliance is essential in sustaining this success. This should be supported by effective communication and commitment between users and POCT coordinators.