



# IMPROVING WORK EFFICIENCY:

## Revamping ward statistics system within the Speech Therapy Department

### BACKGROUND

In the Speech Therapy Department, each Speech Therapist (ST) keeps an active list of inpatients referred to ST. This hardcopy list is called "ward statistics (stats)". When updating the stats daily, the following information is handwritten on the hardcopy by the STs as shown below.

SPEECH THERAPY DEPARTMENT INPATIENT DAILY STATS RECORD

NAME: \_\_\_\_\_ MONTH: November 2017 WARD: 12

BID NO.	NAME / IC	W							T							Last rly date	Last rec diet																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14			15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
24/5	Lim A.T. S1274567A																																
24/8	Tan B.C.																																
24/10	Goh C.D.																																
26/12	Lim G.D.																																

Annotations: "When to review the patient (a line means to review either days indicated; a dot means to review on that day itself)", "TAs will indicate if patient has discharged (d/c), transferred to another ward (S6/S6/1) or deceased (RIP)", "Initials of the ST who saw the patient", "Charge code for that session (e.g. '1' for initial assessment; '6' for dysphagia review)", "Diet and fluids recommendations (i.e. H = honey; PFM = porridge and finely minced)", "RIP or DC", "ROR", "TRACH", "REHAB", "# NEXT RV", "\pt not available", "TRF", "H&N".

On occasions where STs have to cross-cover, they will need to locate the other ST's stats to update the patients' details. These stats are stored in a communal document tray in the admin room. Every Monday, Wednesday and Friday, Therapy Assistants (TAs) will also help to check if patients have discharged, transferred to another ward or passed away and help STs update the stats accordingly.

The overall process to update patients' details and updates is time consuming and prone to error. This results in patients being "missed out on" and not reviewed as regularly as they should be.

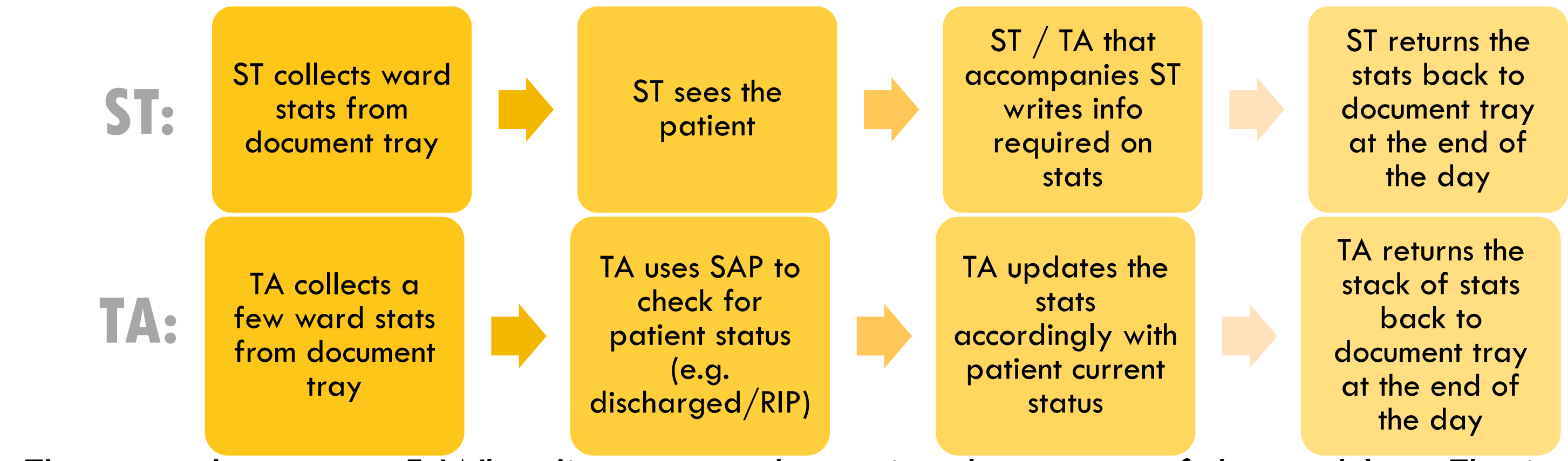
### MISSION STATEMENT

In 6 months' time & within the wards covered by a specific team (CardioRespi) within the department, the project team aimed to:

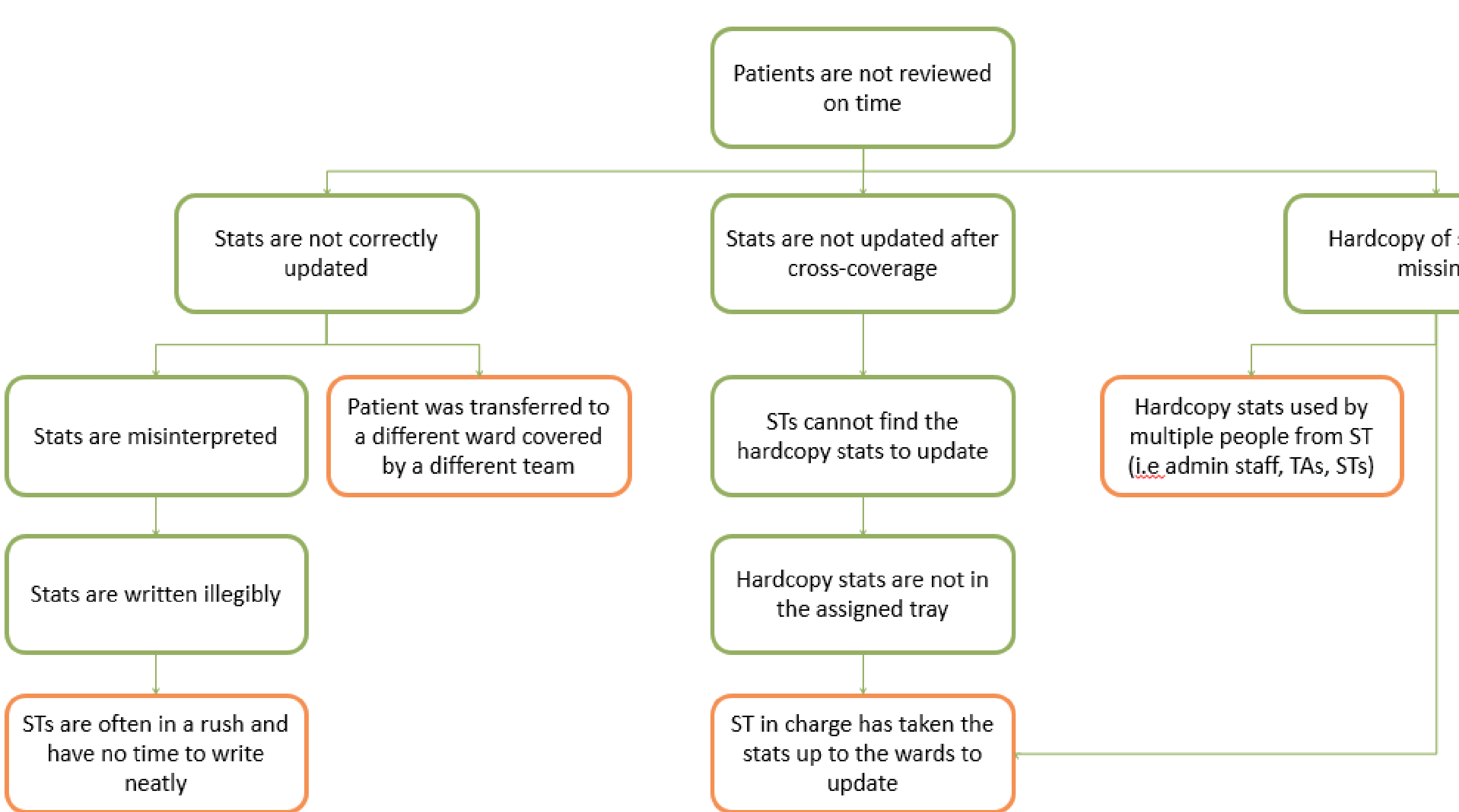
- Goal 1:** Reduce the time taken for the individual STs to update the appropriate stats by 30%
- Goal 2:** Eliminate human error of missing out patients on the stats to 0%

### METHODOLOGY

To find out why this problem was happening, the project team first plotted a flowchart of the process of updating stats in two different situations.



Then, we drew up a 5-Why diagram to determine the causes of the problem. The issues (in orange boxes) were identified and addressed.



### INTERVENTION

To solve these issues, an electronic Microsoft Excel sheet was created to replace the hardcopy stats. This electronic copy of stats (e-stats) is stored on a secured network online accessible only by STs and TAs so that all information is kept confidential. With feedback the department, several Excel functions (see below) were built into the spreadsheet to improve efficiency and reduce the amount of administrative work that had to be done.

SPEECH THERAPY DEPARTMENT INPATIENT DAILY STATS RECORD

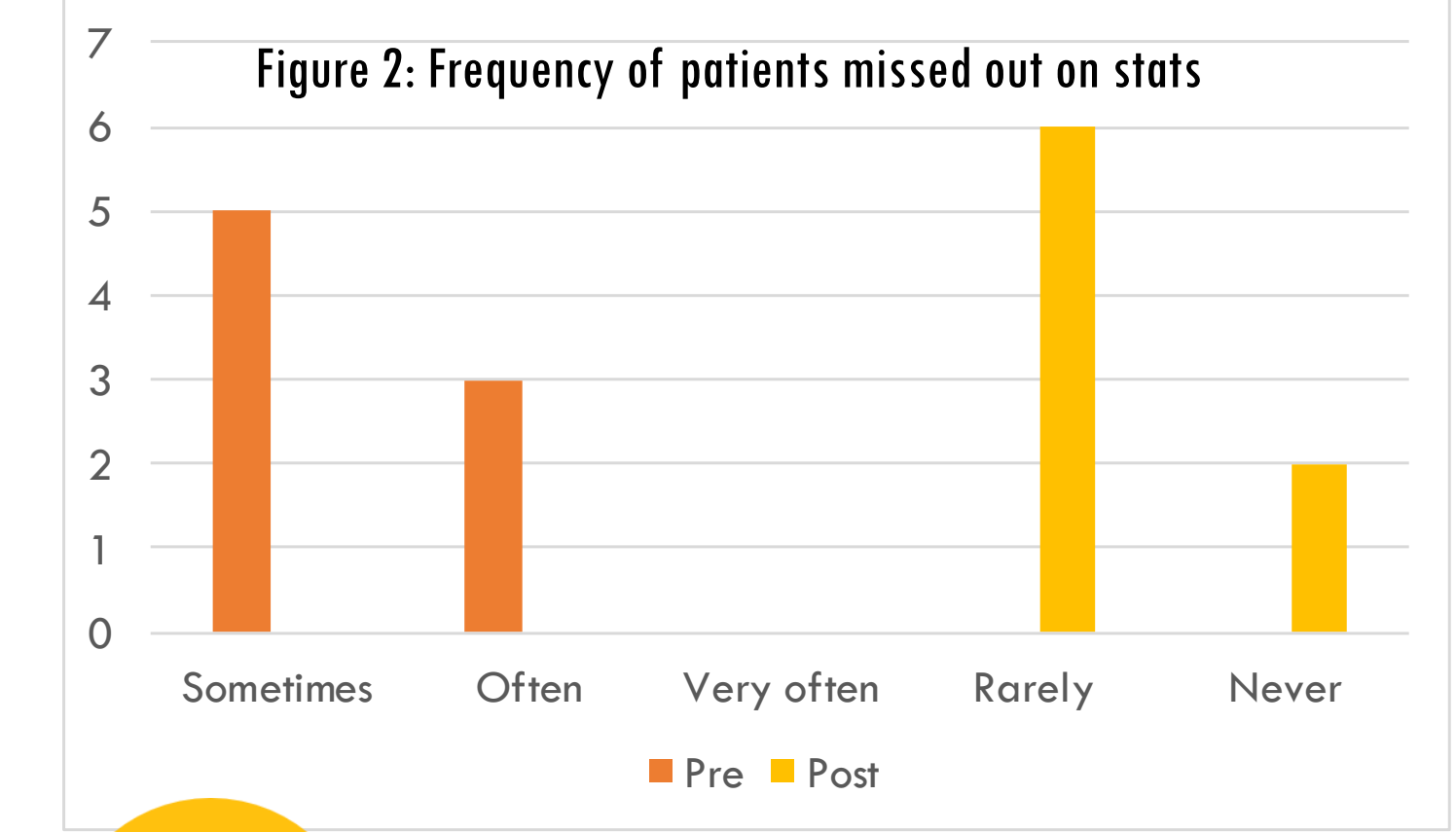
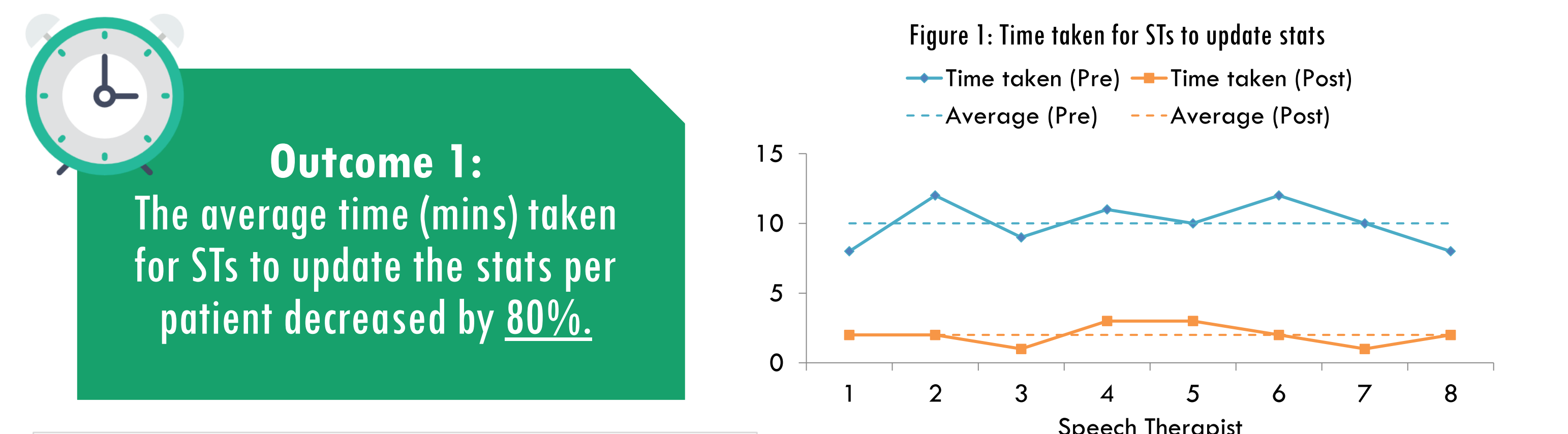
ROOM	BED	NAME	NRIC	PLANS / COMMENTS	WEEK									
					T	F	S	S	M	T	W	T	F	
20	5	Rameshram d/o Venkubachalam	S6822122F	PCS/T										
22	10	Mariam Et Ismail	S0084893Z	off TPN. NGT for poor intake. TOU done										
9	1	Donna Hoon	S2223157z											
20	4	CHIN CHAN LEE	S2530881F	BB 6 Tsipe FF chin tuck										

Annotations: "1) Sort by chronological order", "2) Color coded for easy viewing. Row turns to that color automatically when certain key words are typed in e.g. RIP", "3) STs can type in comments that are important to help with handovers and cross coverage".

Root Cause	Solution provided in Excel and Infopedia
STs are often in a rush and have no time to write neatly	<ul style="list-style-type: none"> <li>STs will type instead of write.</li> <li>Standardised format allows for auto-completion of various fields</li> </ul>
Patient was transferred to a different ward covered by a different team	<ul style="list-style-type: none"> <li>STs can easily use the "Find" function to search for the patient within the stats. Patients can be easily transferred from one ward stats to another via the "copy and paste" function.</li> </ul>
ST in charge has taken the stats up to the wards to update	<ul style="list-style-type: none"> <li>Stats are now available online for everyone to access</li> </ul>
Hardcopy stats used by multiple people from ST (i.e. admin staff, TAs, STs)	<ul style="list-style-type: none"> <li>Infopedia does not allow for multiple users to access the same file. However, each ward has its own stats document, instead of all the wards being put all together. Hence it would reduce the likelihood of more than one user opening the file at the same time.</li> </ul>

### RESULTS

Data was collected over a period of 8 weeks and a pre-implementation and post-implementation survey was sent out to 8 STs and 7 TAs to seek feedback on the new e-stats system. The results of a paired t-test shows a statistically significant drop in the time taken to update the stats, with a one-tailed p-value ( $3.17 \times 10^{-6}$ ) of less than 0.05.



### SUSTAINABILITY PLANS

The e-stats system has already been rolled out to the entire department, and all TAs are trained to help with the new system. Based on feedback from the department, there are ongoing efforts to improve functions of the excel sheet to make it more user friendly. For example, another formula was further added to help with calculations of the department's productivity (i.e. number of unbilled/unmet patients), which decreased the time needed to calculate these statistics manually.