

# Improving Patient Flow in Emergency Department During System Downtime

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## Background

Our project 'Woodlands Health Emergency Department Downtime M365 Teams Trackboard' aimed to implement an innovative digital workflow system to streamline the administrative processes within the Emergency Department during an Electronic Medical Records (EMR) downtime.

Prior to our project, significant preparation work was needed before a scheduled EMR downtime, and information documented on paper lacked restricted account-based access, raising security concerns. Tracking of patients within the crowded Emergency Department was difficult, as manual entries were only recorded in specific areas, preventing a comprehensive overview of patients. Additionally, paper documentation carried legibility issues, making it difficult for staff to read and accurately transcribe information into the EMR during downtime recovery, requiring substantial effort and manpower.

## Methodology

The solution involves utilizing Microsoft Teams which comprises 2 elements (List and Excel application), to enhance communication and coordination among all staff. By enrolling all relevant personnel into Microsoft Teams, the department can ensure that everyone has access to real-time updates and information.

The List application will replicate most of the tracking board information from the EMR, providing a duplicated version of the tracking board during downtime. The Teams Trackboard displays key information including patients' latest location, primary doctor, nursing and radiological orders. (Refer to image below)

Pt. Name	Date	Bed No.	Doctor	Status
Hani Ramani (W)	8/11/2024 5:38 AM	P2-402	Jen Chi Loong (W)	Trace CT results
EDU	8/11/2024 5:38 AM	E-07		
Nicholas Teo Zi-Rong (M)	8/11/2024 5:39 AM	E-08	Ethan Nadesan Malle	
Siti Nabihah Enni Kusni	8/11/2024 5:39 AM	P2-404	Jen Chi Loong (W)	Repeat FAST 0700hrs (R/F CK) UCB
EDU	8/11/2024 5:40 AM	E-09		
Hadi Saiboo Shanabam (M)	8/11/2024 5:41 AM	P2-405	Jen Chi Loong (W)	trace labs and xray
Siti Nabihah Enni Kusni	8/11/2024 5:43 AM	P2-406	Pothawade Soshi Equale	EDU to home Assets get later
Nicholas Teo Zi-Rong (M)	8/11/2024 5:44 AM	E-11	Pothawade Soshi Equale	
Caleb Ho Jie Wei (MCHS)	8/11/2024 5:44 AM	P2-407	Mehar Ali Ashfaq Akter	Adv 2nd trip
Nicholas Teo Zi-Rong (M)	8/11/2024 5:46 AM	24	Evan Liu Yin (W)	
Nicholas Teo Zi-Rong (M)	8/11/2024 5:47 AM	23	Evan Liu Yin (W)	
Nicholas Teo Zi-Rong (M)	8/11/2024 5:47 AM	P2-408	Jen Chi Loong (W)	LPT, Offload in the RV in AM 8/17 DC
Nicholas Teo Zi-Rong (M)	8/11/2024 5:47 AM	20	Evan Liu Yin (W)	

Each patient entry in the List application will then be accompanied by an individual Excel attachment containing essential patient documentation, including triage and consultation notes, vital signs charting, and more. This Excel attachment allows multiple users within the healthcare team to work simultaneously. This can be accessed and edited by multiple users. Consultation notes can be copied over to NGEMR during system recovery. (Refer to image below)

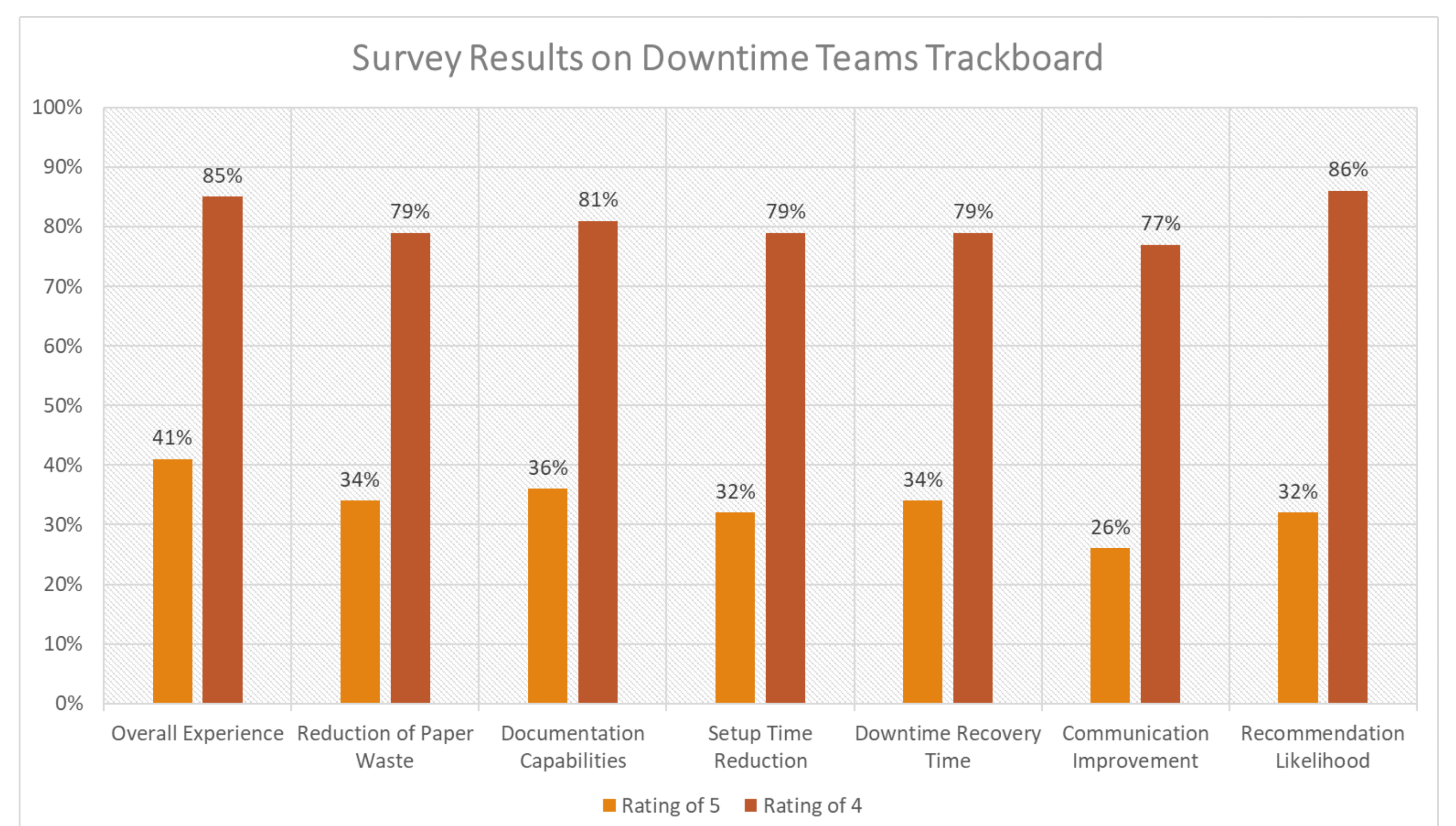
ED Senior Doctor	Disposition Time	HH:MM (AM/PM)
Consult Date	Disposition Status	<No Selection>
Consult Time	Discharge Suboption	<No Selection>
Allergies	Medical Certificate/Light Duty	
Allergy Details		
Chief Complaint		
Consult PAC		<No Select>
Diagnosis		<Free Text>

### Benefits:

- ✓ Patient movement within a large emergency department can now be tracked effectively
- ✓ Significant improvements in both patient care and staff efficiency
- ✓ Digital documentation allows for legible records, enabling staff to read and carry out orders safely
- ✓ Reduction in recovery time contributes to an improved patient experience and increases staff satisfaction at work

## Results

A whole-of-department survey was conducted to gather feedback from medical (including both senior and junior doctors), nursing, patient service associates, and radiology staff. The staff was asked to rate their experiences with Microsoft Teams in comparison to traditional methods involving hardcopy paperwork.



## Discussion

The main objectives have been successfully met, namely:

- Effective real-time tracking of patients' movement and location of patients via Teams Trackboard
- Teams Trackboard facilitated close communication between the multiple users (Doctors, Nurses, Radiographers) on the critical tasks to be performed. This is a significant improvement from the previous use of manual hardcopy forms that were passed around the various staff, and hand delivery of order forms to Xray rooms
- Electronic documentation significantly increased efficiency and minimized transcribing errors in lieu of handwritten notes
- In addition, one key concern is the potential threat to data integrity especially since the Teams Trackboard and 'live' Excel sheet allow simultaneous access and editing by multiple users. Our team ensured that the input and edits of individual users are tracked, and can be reversed, when necessary, e.g. when an individual user deletes large segments of patient's notes accidentally
- Recovery time has been significantly reduced, as staff can now easily copy and paste entries from Excel notes into the EMR system

## Acknowledgement

The team would like to acknowledge the help and effort of the following:

- ED Senior Management, ED Operations Team
- Radiology Department
- Dr. Tam Howen and Mr. Lyon Mackenzie from the NGEMR team