

Transforming Care using Standardized Electronic Handovers

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Aim

To assess feasibility of transforming patient care using only electronic handovers documentation template via Next Generation Electronic Medical Record (NGEMR)-EPIC Hyperspace system for Acute and Emergency (A&E) Department admissions to general wards (GW) with the following targets to improve:

- Nursing efficiency and productivity
- Nursing manpower utilization
- Effective interdepartmental transfer of patient care

Background

Nursing handover is defined as the transfer of professional responsibility and accountability of patients via exchange of crucial information between care teams to ensure consistency of patient care. Through internal review, **physical nursing handover process** from A&E to GW consumes an average of **30 to 45 minutes**, as A&E nurses are required to leave the department to handover to inpatient team.

With the implementation of NGEMR integrated system using EPIC Hyperspace that synchronises patient's records across restructured institutions in Singapore, the A&E team along with various stakeholders have reviewed to explore an alternative handover process to improve nursing efficiency in the midst of overcrowding situation in A&E.

Team Members

Name	Designation	Department
Ratnasari Yawieriin	Senior Nurse Manager	A&E
Lynette Thng Wei Ling	Senior Nurse Manager	D87
Sathiya Veerarhagavan	Senior Nurse Manager	A71
Loh Pey Lin	Nurse Clinician	A&E
Aisyah Nasir	Nurse Clinician	B86
Nurhayanti Bte Sulaiman	Nurse Clinician	D78
Bernice Leong Su Min	Assistant Director, Operations	SOC services
Kathleen Koh Yin Yee	Assistant Manager, Operations	A&E
Shirley Goh Shini	Senior Executive	Portering Services
Cruz Katherine Ko	Patient's Care Officer	KTPH@Home

Intervention/Implementation

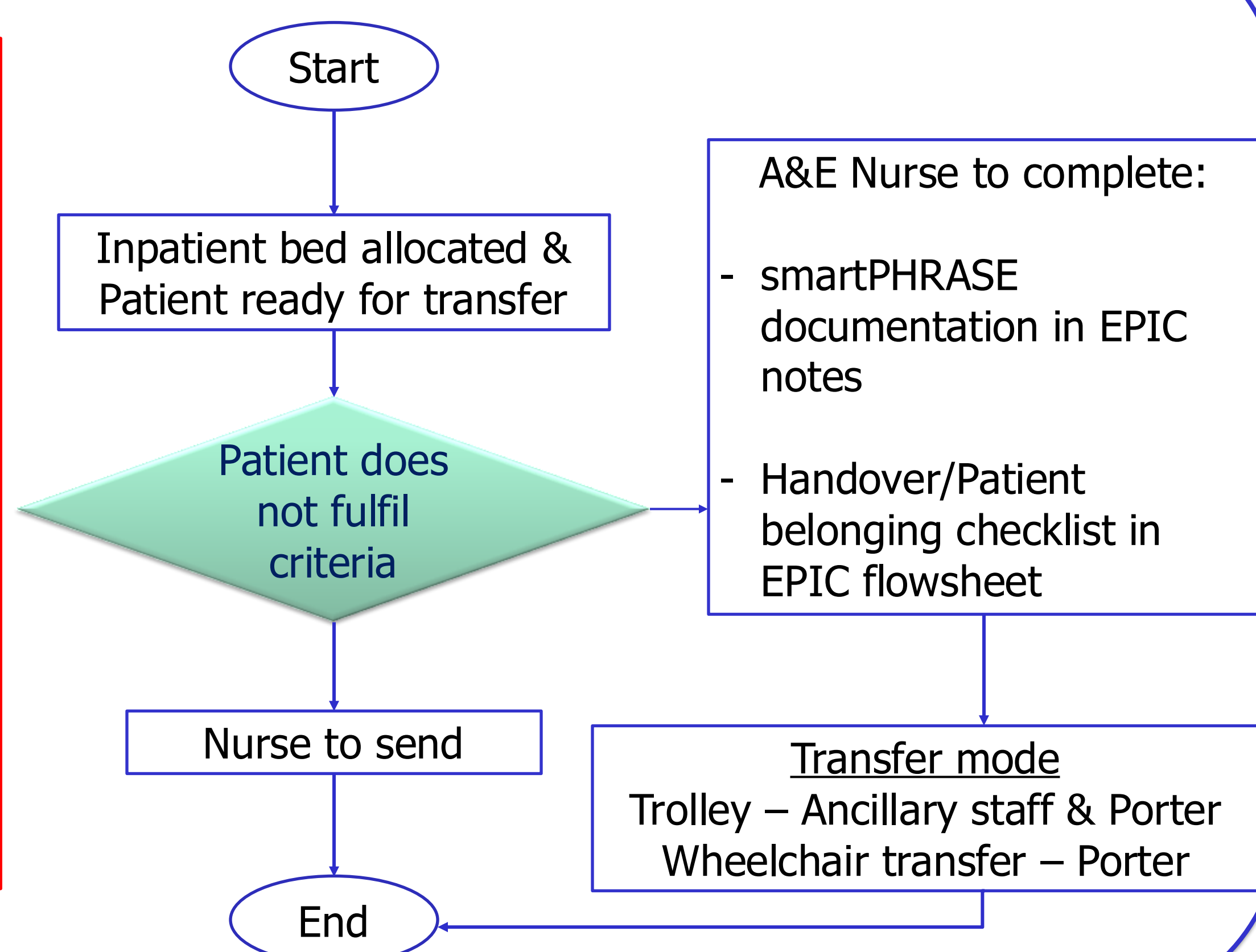
The interventions include:

1. Establish the **Electronic Handover process**
2. Establish the **Exclusion criteria** for EDIP Electronic Handover
3. Create a **smartPHRASE template** to pull patient's existing information and data into a structured handover template
4. Perform **Failure Mode and Effects Analysis (FMEA)** at the initial phase to identify process functions/effects and potential failure modes

Electronic Handover Process

Exclusion Criteria:

- DDIL cases
- NEWS score >4
- Violent & agitated patient
- High suicide risk
- Infusion pumps
- Ongoing blood transfusion
- Spinal nursing
- Hip/Lower limbs fractures
- Patient with tubes e.g. chest tubes, tracheostomy, laryngectomy, ongoing CPAP/BIPAP therapy



Onward 2026

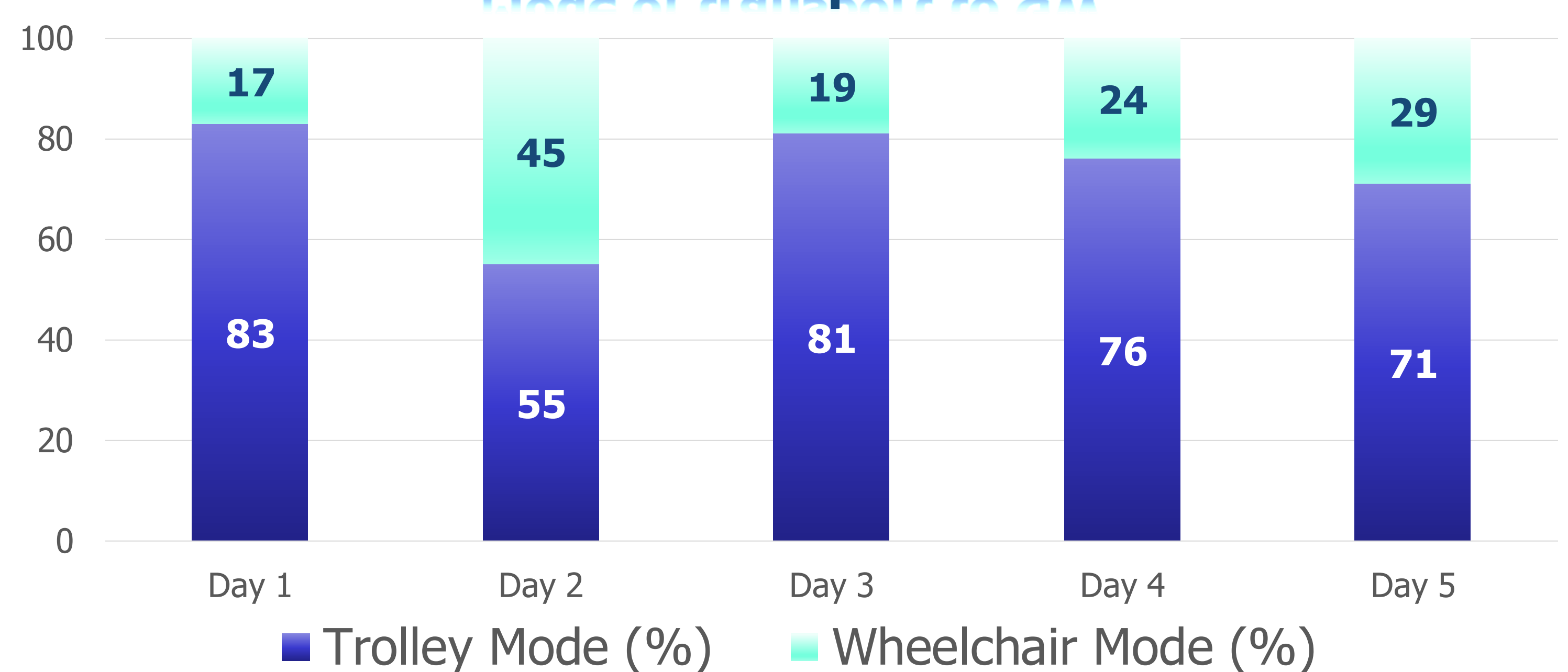
1. **Quality and patient safety** – streamlined continuity nursing care handoffs using structured electronic smartPHRASE template to ensure critical information are documented
2. **Operational resilience** – Physical handover switching to electronic handovers improve efficiency and eligible patients will be transferred to GW by ancillary staff via wheelchair or trolley. Inpatient nurse refer to electronic handover notes for care information.

Results & Outcomes

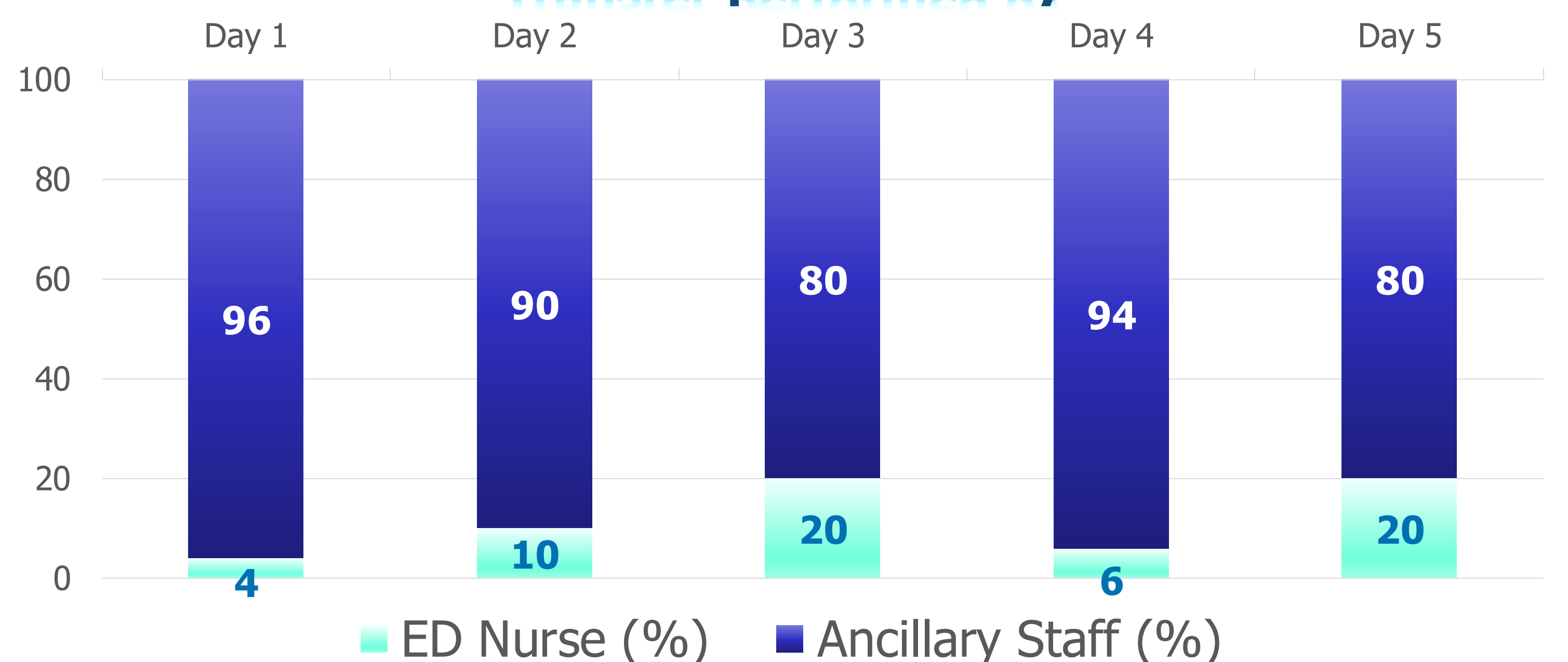
Results

1. The total percentage of **patients transfer** via **trolley** and **wheelchair** were **73%** and **27%**, respectively.
2. **3-20%** of the transfer are performed by **A&E nurses** and **80-96%** are by **ancillary staffs**

Mode of transport to GW



Transfer performed by



Outcomes (Clinical / Non-clinical):

1. Reduction of time for A&E nursing staff being away from the clinical
2. Better focus of care for patient in-department
3. Nursing manpower resources utilization is improved

Savings / Cost Avoidances:

The average transfer and handover duration has improved from 30 to 45 minutes to 18 minutes. This improves better utilization of nursing manpower and nursing productivity.

Conclusion

1. 73% of patients still required trolley transfers by one ancillary staff/Nurse along with a porter. However, the nursing involvement is remarkably low.
2. The average transfer with handover duration has shown a significant time saving up to 27 minutes.
3. This implementation has helped to improve better utilization of manpower resources, work efficiency and productivity.
4. This initiative is timely especially with overcrowding situations and high volume of lodgers in A&E.