NUHS@Home

Home-based Inpatient Substitutive Care

NUHS
National University Health System

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BACKGROUND

NUHS@Home seeks to address the **impending shortage of hospital beds** by reimagining the way we deliver inpatient care by **bringing hospital-based services to patients within the comfort and safety of homes**. The concept is internationally known as hospital-at-home, and has been well established to be a less costly way to provide inpatient care with comparable clinical outcomes.

OUTLINE OF ISSUE

Due to its ageing population, Singapore is projected to have **insufficient number of hospital beds** within the next decade. There will also be **insufficient doctors and nurses** to staff these beds. The **COVID-19 pandemic** and the demand it placed on our hospital resources further increased the need to reimagine the delivery of care to meet these challenges, by bringing inpatient care to the community.

IMPLEMENTATION

Patient Journey

Identification

- Patients may be identified from different sources, e.g. Inpatient, ED and community.
- Patients will be screened for suitability by the NUHS@Home team.

Set-up

- Nursing assessment through physical home visit or via tele-consult.
- Set up vital signs monitoring equipment, educate patients and caregivers on self-management of medications.

Daily Treatment

- Daily multidisciplinary team meeting to discuss care plans.
- Patients are assessed if they required any additional procedures, e.g. scans, investigations, physiotherapist visit.

Discharge

- When patients fit discharge criteria, patients will be discharged with discharge medications, hospitalisation leave, and arrangement for SOC or polyclinic follow up.

Elements of Care

Home visits by clinicians

Teleconsult

Blood tests

Intravenous therapy

Scans in hospital

Vital signs monitoring

Team Composition

Consultant : Assumes overall responsibility of care and develop protocols

Resident: Assists with ward rounds via tele-consult or physical review and standby for after office hours on call duties

APN: Oversees staff nurses and 3rd party service provider to ensure protocols are adhered

Staff Nurse: Assumes nursing responsibility of care through physical or virtual assessment

Care Coordinator: Escalates potential abnormal sign to clinicians via remote vital signs monitoring

Pharmacist: Prepares medication and develop medication dispensing protocols

Program Coordinator: Coordinates with internal and external stakeholders to facilitate patient transfer

Other Allied Health: Assessment on as required basis

Development Timeline of NUHS@Home

2019

- Introduced team members to hospital-at-home care model and proposed adaptation to trial in the Western region of Singapore.
- Discussed on timeline and protocols.
- Pitch by 3rd party vendors

2020

- Process mapping and development of protocols.
- Simulation with team members and external vendor
- Sep 2020: Launched NUHS@Home pilot

2021

- Sep 2021: NUHS@Home pilot paused to conserve manpower and pivot to COVID Virtual Ward
- Concurrently, submit proposal to seek funding support from MOH

2022

- May 2022: Launched NUHS@Home Phase II with MOH Sandbox funding at 6 beds capacity
- To progressively increase the bed capacity

DEVELOPMENT OF IMPROVEMENT FROM NUHS@HOME PILOT

✓ **Clinical Outcome**
- **14.6%** 30-day readmission rate
- **0.83%** mortality rate

✓ **Costs**
Direct cost saving of **50% - 70% lower** than usual hospitalisation due to avoidance of fixed hospital charges in inpatient setting

✓ **Length of Stay (LOS)**
Hospital bed days saved per NUHS@Home patient – Average LOS 4 days (median length of stay)

✓ **Experience**
Positive patient and caregiver satisfaction with the programme.

SUMMARY

- Inpatient hospitalisation has been the conventional strategy to care for acutely ill patients within our healthcare system. Hospitalisation in itself also carries potential risk, especially for elderly patients, with increasingly potent nosocomial infections, and risk of hospital-acquired deconditioning.
- Bringing inpatient care into homes is a potential long term solution to Singapore's challenge of addressing the healthcare manpower shortage which will be exacerbated by our aging population.