

QUALITY FESTIVAL 2025

Lightening the Load: How Pre-Positioning Kits Enhanced WH@Home's Care Delivery

Problem

WH@Home is part of the national Mobile Inpatient Care@Home (MIC@Home) initiative, an innovative model of care that brings acute hospital care to the home. The conventional MIC@Home model requires nurses to pack and carry medical supplies during their home visits. This places a physical strain on nurses, who must either carry all the supplies in at one go or make multiple trips back to the hospital to restock. These return trips not only consume valuable time that could be spent on direct patient care but also incur unnecessary costs. As WH@Home expands, this inefficient process limits our ability to deliver timely, high-quality care in patients' homes.

Aim Statement

The introduction of Pre-Positioning Kits (PPK) by the Programme Coordinators (PC) aims to optimise the WH@Home service delivery in three ways:

1. Improving patient care outcomes by ensuring medical consumables are readily available at patients' homes for WH and MinMed nurses (WH@Home third party vendor for after-hours service).
2. Enhancing nursing efficiency by eliminating restocking trips between home visits and reducing physical strain.
3. Saving 1.5 hours of nursing manpower per patient care episode through PC-managed kit preparation and dispatch.

Team Members

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The team would like to express our gratitude to the WH@Home team – our leadership, Doctors and Nurses for their support in making this initiative possible.

Current State

Prior to PPK implementation, nurses were responsible for managing their own consumables, carrying approximately 10kg of supplies in luggage and backpacks. Space and weight constraints led to selective packing, resulting occasionally in missing items, and insufficient supplies when patients' conditions change. This situation necessitated 1 to 2 daily return trips to the hospital for restocking. As a result, each nurse could only attend to 3 patients per day, as considerable time was spent on supply management. While this ensures comprehensive care delivery, it results in significant time spent on logistics rather than clinical care.

Root Cause Analysis

5 Whys? – Why are nurses unable to maximise their time outside campus?

Nurses are making multiple return trips to the hospital to replenish their supplies

↓ *Why do nurses need to return to hospital to replenish their supplies?*

Nurses do not have sufficient supplies to render appropriate care to patients, especially when patients' conditions change.

↓ *Why don't nurses have sufficient supplies with them?*

Supplies are not provided to patients when they are discharged home, and nurses are unable to carry all necessary supplies into the community.

↓ *Why can't nurses bring in sufficient supplies into the community?*

This is to account for sudden changes in patients' conditions, potential sharing of supplies between patients, and the impracticality of carrying heavy equipment needed for multiple home visits.

↓ *Why are there too many supplies to bring out?*

Because care needs vary significantly between patients, hence it is challenging to standardise supply kits accordingly.

Interventions

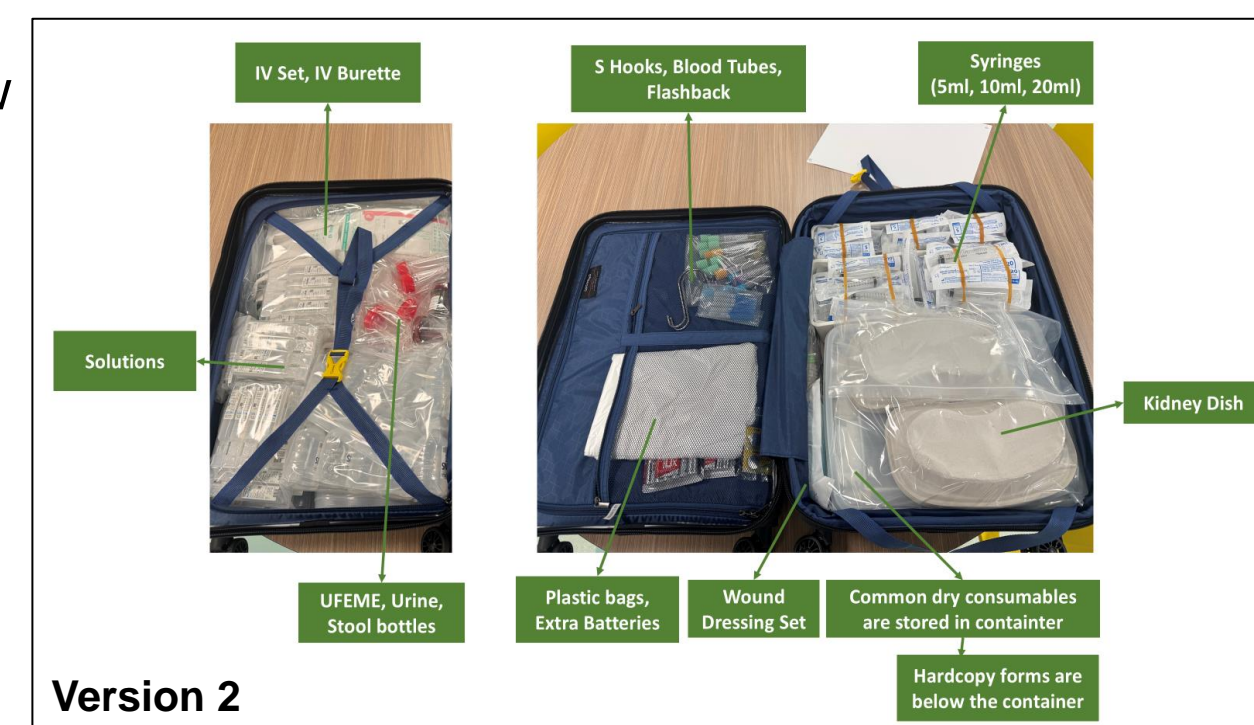
A pre-positioning kit (PPK) containing 7 days' worth of consumables was implemented in October 2024 (version 1) & in February 2025 (version 2).

Version 1: Condition-specific Pre-Positioning Kit (Implemented Oct 2024) The kit was developed with five condition-specific sets (A to E), each packed with a week's supply in separate zip-lock bags. The screening team would inform the PCs about the sets to pack based on patients' clinical needs.



Version 2: Standardised Comprehensive Kits (Implemented Feb 2025)

The new standardised PPK consolidated Sets A to D for all patients, with Set E available on request. Supplies are now organised in designated compartments instead of separate bags, eliminating multiple challenges of the initial system while improving efficiency and sustainability.



Results

Version 1: Condition-specific Pre-Positioning Kit

20 PPKs were launched to support WH@Home's 15 beds-in-service. There was a 90% utilisation rate with 217 deployments for 241 patients over 4 months. The intervention effectively eliminated multiple hospital return trips for supply replenishment and significantly reduced the physical burden on nurses during their home visits. However, several operational challenges arose, including frequent kit exchanges when patients' conditions changed, nurses carrying backup supplies due to uncertainty about set contents, and excessive plastic waste. Additionally, PCs faced time pressure to pack and arrange courier services immediately after new patient enrolment. The system also created time-consuming top-up duties for PCs and placed an additional decision-making burden on the screening team.

Version 2: Standardised Comprehensive Kits

As the service grew to accommodate 20 beds-in-service, version 2 that combined all consumables was launched. The new kit, comprising 30 PPKs, completed 268 deployments in 5 months and delivered substantial operational improvements. The standardisation has streamlined workflows, leading to fewer kit exchanges and more efficient replenishment processes. By consolidating common items from Sets A to D into designated compartments and reducing the use of zip-lock bags, the initiative has received positive feedback from patients, WH staff, and external vendors. Consequently, version 2 successfully met all three primary objectives.

Benefits

Benefit to Patient:

- Improved responsiveness and ability of the WH@Home Care Team in adapting to changing patient conditions
- Enhanced continuity of care, resulting in improved patient experience during the transition to home care and a better-prepared home environment
- Increased satisfaction amongst patients and their families

Benefits to Staff:

- Greater confidence and focus amongst nurses in providing patient care, with assured availability of sufficient supplies
- Reduced physical burden on staff, contributing to improved job satisfaction.

Benefits to Hospital and Service:

- Enhanced efficiency in care delivery through elimination of return trips for supply replenishment
- Simplified management of medical consumables for acute care, enabling improved provision of supplies in the community

Sustain & Spread

In light of the positive results and benefits observed, WH@Home team has presented this initiative nationally at the MOHT MIC@HOME Services Workstream to share best practices with healthcare partners. MOHT and several hospitals have requested site visits and sharing sessions. To ensure the initiative's sustainability, further development is necessary. The team is working with NHG MIC@Home and the Centre for Healthcare Innovation to explore several improvements such as establishing dedicated storage facilities to support service expansion and developing a multi-functional PPK design with integrated features like a portable drip stand to enhance staff experience.