

ENHANCING THE HOSPITAL AT HOME EXPERIENCE

TOWLE RM, FAN PEM, ARBA'IN J, ALOWENI F, LIM SH, ANG SY & LIM SF

INTRODUCTION

Hospital at Home programs have demonstrated to be safe, feasible and cost effective (Figure 1). However, challenges such as infection control, cleanliness, space constraints and insufficient resources may hamper the adoption and effectiveness of such programs

Aims: The aims of this study were to i) understand the challenges of providing and receiving healthcare in the community ii) design a solution to meet the challenges, and iii) pilot and evaluate the solution.



Figure 1. Images of a nurse delivering hospital care at home.

METHODS

This is a three-phase mixed method study implemented from July 2022 to November 2022.

Participants

Convenient sampling was used. Patients enrolled under the Hospital at Home Programme or their caregivers or family members, aged 21 years and above, with no history of cognitive impairment and able to converse in English were invited to participate in the study. All community nurses providing Hospital at Home care were included in Phase 1 of the study.

Phase 1

Community nurses & patient-caregiver dyads participated in the survey to understand their challenges and needs in delivering and receiving hospital care at home.

Phase 2

Taking into account the survey findings and suggestions, a prototype of an integrated structure (a movable, cabinet-like structure designed to meet the needs by those providing or receiving care in the community) was designed.

Phase 3

The final prototype was piloted in 10 patients' home to gather their feedback and user experience.

Data analysis

For Phase 1, descriptive statistics were used to analyze the survey results. In Phase 3, the audio recordings were transcribed verbatim before content analysis was performed on the qualitative data.

RESULTS

Phase 1: A total of 70 participants responded to the survey; 50 patient-caregiver dyads and 20 community nurses.

- Medication management such as polypharmacy, storage, clean space for medication preparation and pill minding (54%) was the greatest challenge faced by the dyads (Figure 2).
- Physical home environment; cluttered home (38%), space constraint (17%) and cleanliness (14%) were most cited as the main challenges when providing healthcare at home, particularly the lack of a dedicated and clean space to conduct nursing procedures (Figure 3).

What are your main challenges at home? n = 50

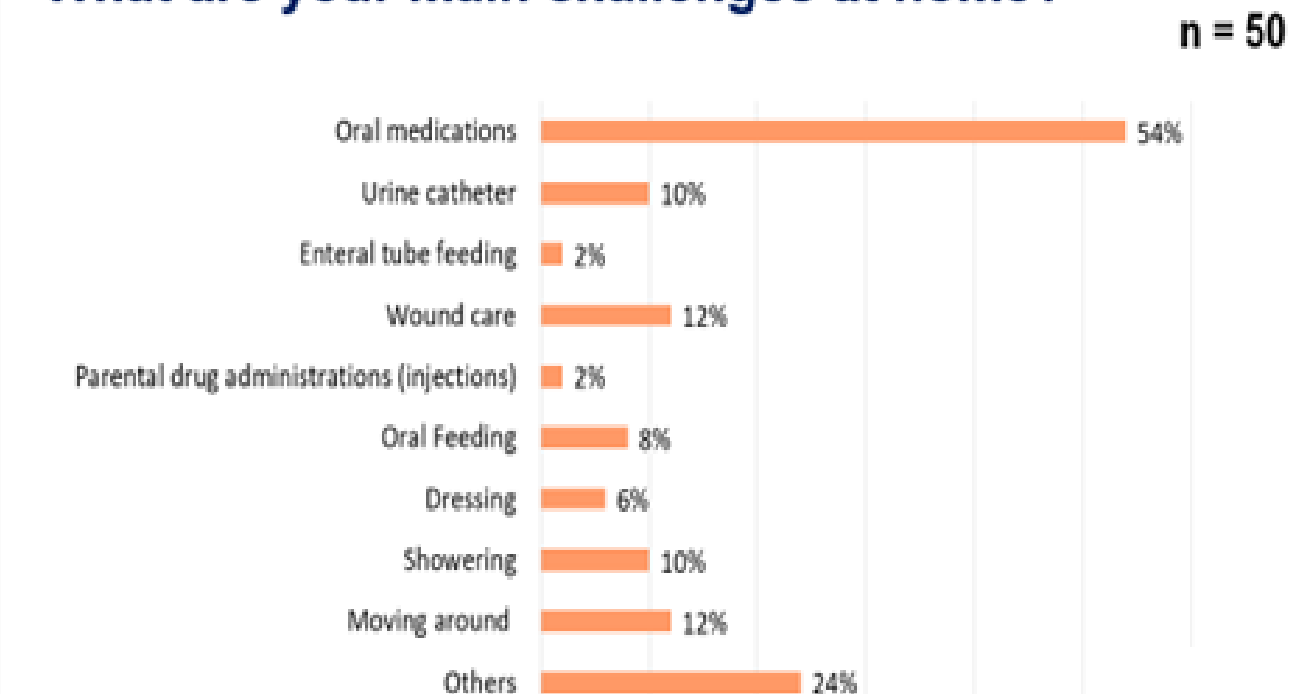


Figure 2. Dyads key challenges

What frustrates you/what limits your ability to perform your task easily in the home? n = 20

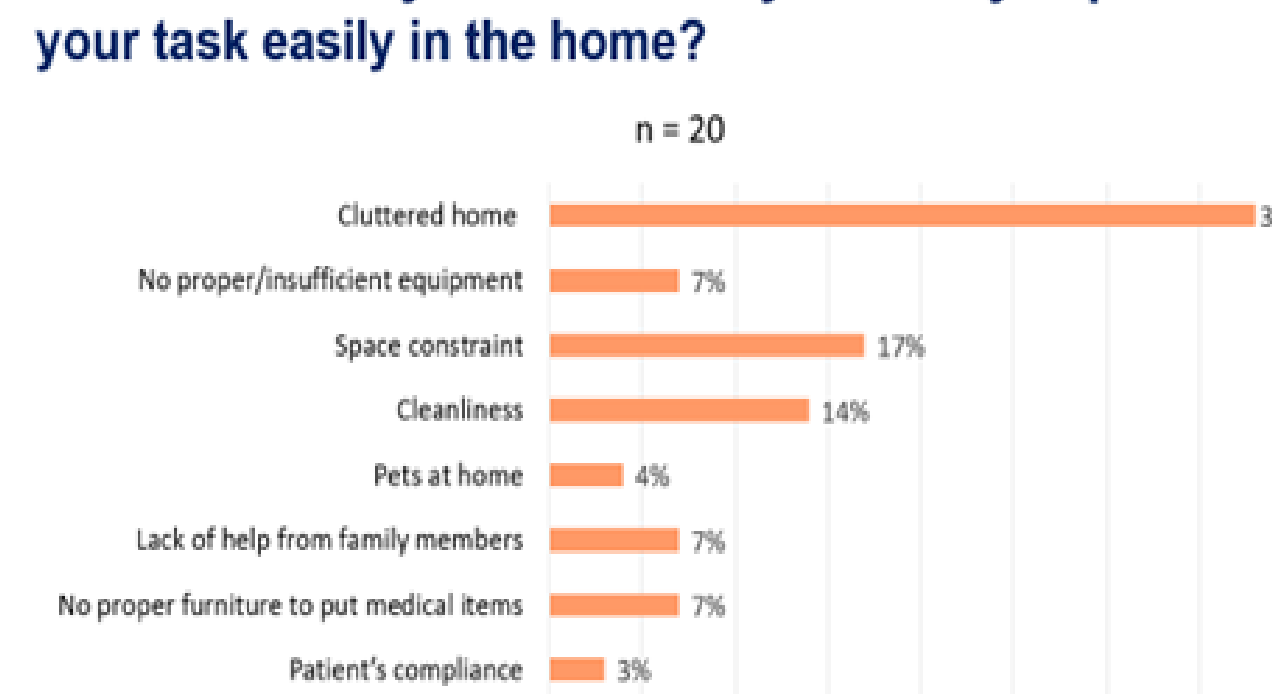


Figure 3. Nurses key challenges

Phase 2: Design solution

The initial artist impression of the structure (Figure 4) was co-designed with stakeholders. The first prototype, named H@H Buddy (Figure 5) differed from the initial artist impression as design change took place to ensure stability of the structure. The prototype design was further reviewed and revised to incorporate all the modifications and specifications required based on the user's feedback (Figure 6 & 7)



Figure 4: Artist impression

Figure 5: Prototype 1

Figure 6: Final prototype

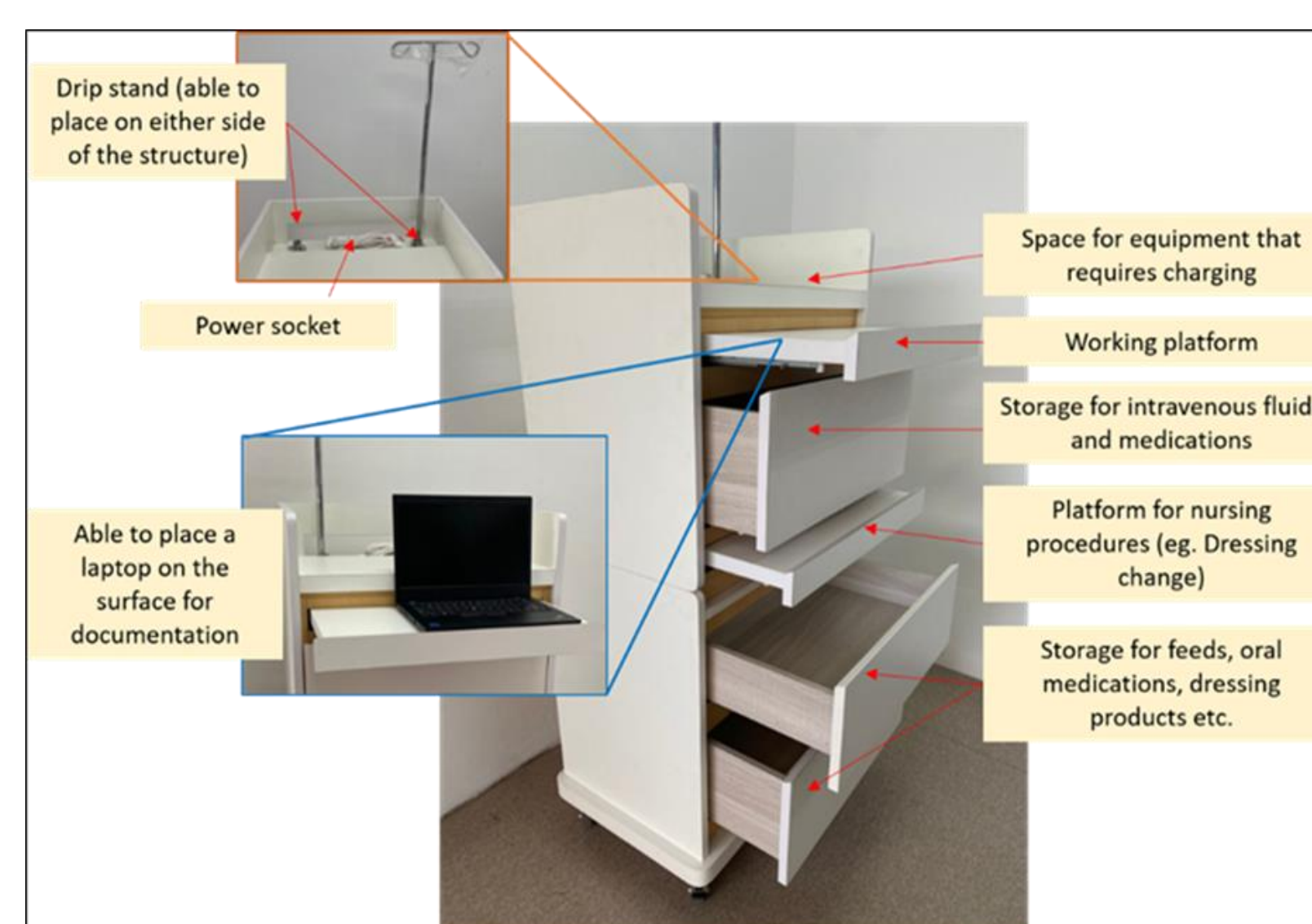


Figure 7: Final prototype design specifications & functions

Phase 3: Ten patient-caregiver dyads and nine community nurses completed the post evaluation interview. Most participants found the structure useful but had some feedback and suggestions for future enhancement/improvement.

The participants appreciated that the structure provided ample storage space for their one-stop healthcare consumables and equipment. The small table-top provided a clean workspace for the nurses to place their laptop or medical requisites.

Common recommendations cited were to improve the design, size and outlook of the structure. The size was too bulky especially for small houses/apartments. Participants recommended to have the height and size reduced, and drawers to open more easily. As for cost, most were willing to pay anything below \$100; those with lower income suggested to include government subsidies to keep the price affordable.

DISCUSSION & CONCLUSION

Discussion

Providing healthcare services in the home setting will become a necessity due to the changing healthcare needs. Through this study, we have identified several challenges that the Hospital at Home nurses face while carrying out safe hospital care at home, and opportunities for improvement and innovation. The integrated structure was useful and practical to use in our local home setting and layout. Although the structure provides a solution that is less costly and permanent as compared to a home modification, more work is required to further enhance the aesthetics, layout and size of this current version. The team hopes for the structure to be designed to allow it to be repurposed as a common household furniture if the patient does not need it for their healthcare use anymore. The team is also conscious to keep it affordable as most patients are only willing to pay below \$100 for such a structure.

Conclusion

The integrated structure H@H buddy is useful and practical to use in a home care setting. Stakeholders found the structure useful in organizing their healthcare and medical items or consumables such as medications, diapers, milk supplements, and creating a safe workspace for the visiting community nurse. This enhances the experience, efficiency and comfort of the patient, family and staff.

Implications for future practice

Our findings guide the design of optimal user experience in delivering and receiving hospital care at home. With knowledge of stakeholders' preferences, we will be able to inform the design of an ideal integrated structure to facilitate delivery of hospital care at home in the future.

Implications for future research

Further studies could be performed in efforts to improve the experiences of healthcare providers and patients in Hospital at Home programs. The H@H Buddy can be further improvised to cater to the various needs of the patients enrolled in the Hospital at Home programs.