
| RESEARCH ARTICLE

Development of Competency Framework for Nurses in Hospital-at-Home in Singapore

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| ABSTRACT

Mobile Inpatient Care at Home (MIC@Home), also known as Hospital-at-Home (HaH), was introduced in Singapore to enable treatment modalities traditionally done in the hospital to be carried out in the comfort of patients' own homes. Management of higher acuity patients in the HaH setting requires nurses to have a wide range of skills from both inpatient and community. The purpose of the study is to develop a competency framework to guide the training curriculum of HaH nurses to ensure sustained quality and safety of care of patients. The six-step model for developing competency framework was applied and a Delphi process was then employed to ensure the validity of the framework by seeking feedback and consensus from a panel of experts from both clinical and nursing backgrounds. A competency framework was developed, acknowledging the limitations of the small panel of experts surveyed and also the possible overgeneralisation due to the patients' acuity, complexities and specialties of our HaH team. We have proposed a competency framework that will serve as an important playbook for hospitals in equipping HaH nurses with the necessary tools, resources and knowledge to ensure the standard of care for HaH patients.

| KEYWORDS

Nursing, Competency Framework, Hospital-at-Home

| ARTICLE INFORMATION

ACCEPTED: 01 February 2025

PUBLISHED: 20 February 2025

DOI: 10.32996/bjns.2025.5.1.1

1. Introduction

The ageing population has challenged healthcare systems to explore novel ways to meet rapidly increasing healthcare demands. Mobile Inpatient Care at Home (MIC@Home) or Hospital at Home (HaH) was introduced in Singapore in April 2022 to enable treatment modalities traditionally carried out in hospitals to be performed in patients' own homes. This model aims to reduce the need for hospital beds (Leong et al., 2021), reaping benefits from recovery at home such as comfort, decreased risk of hospital-acquired infections, and increased activity with family and caregivers (Khalik, 2024).

Changi General Hospital (CGH) piloted HaH from April 2023 to March 2024 before it officially became part of the healthcare services offered in all restructured hospitals in Singapore from April 2024. The pioneering nursing team at CGH since the pilot phase comprised of three community nurses. The team then grew with the addition of inpatient nurses experienced in emergency medicine, critical care, and general ward care.

Inpatient nurses are well-versed in hospital care coordination and quick to respond to changes in medical conditions. Community nurses provide person-centered care in the community and have attributes such as being adaptable and resourceful while managing a wide scope of medical conditions and psychosocial needs of patients, their families if not caregivers (Ministry of Health, 2017; Muhsin et al., 2020; Ranta & Kaunonen, 2024). Managing higher acuity patients in the community under HaH requires nurses to possess a wide range of skills, especially the synergy of inpatient and community nurses' knowledge and skills is critical (Dorrego et al., 2022). However, there is a lack of standardized training protocols for the unique skillset required of HaH nurses (Denecke & Reichenpfader, 2024).

This calls for a competency framework to guide the training curriculum of HaH nurses to ensure sustained quality and safety of patient care.

A scoping review by Batt et al. (2021) found that there are common steps taken to develop competency frameworks and guidelines. It highlights the importance of aligning purpose, current guidelines, and outcomes for evaluation, involving inter-professional stakeholders as care provision requires different groups of professionals working together. The authors summarized the findings from the scoping review into a conceptual framework consisting of six steps. These steps are also reflected in several studies describing the development of competency frameworks (Chen et al., 2021; Leung et al., 2016), which utilize the Delphi method or similar approaches to gain agreement or expert opinions on the framework's validity.

The purpose of this article is to describe the process of developing a competency framework and training curriculum for HaH nurses in CGH.

2. Method

Step 1: Define the purpose and scope

The framework provides clarity in defining the role and competencies of HaH nurses and serves as a guide for clinical supervisors and nurses in HaH to address their training needs. A team comprising a Senior Nurse Manager and two Senior Staff Nurses came together to develop the framework.

Step 2: Identify Contexts of Practice

This step involves identifying current policies and role descriptions and conducting a literature review on existing evidence of HaH nurses.

The team identified existing policies regarding HaH, the roles and responsibilities of a Registered Nurse (RN) in CGH, Singapore Nursing Board Core Competencies for the Registered Nurse (Singapore Nursing Board, 2023) and Community Nursing Competency Framework (Ministry of Health, 2017). Competencies for CGH inpatient RNs and Community Nurses were also analyzed.

The literature search revealed that there are limited to no structured training protocols for HaH. Nurses undergo ad hoc training specific to the particular care delivery they are to carry out in HaH (Denecke & Reichenpfader, 2024). NHS Education for Scotland (2023) was identified as the first to present a skills development framework for nurses and allied health practitioners in HaH.

Discussions to collaborate with various clinical specialists to manage special nursing procedures at home also established the required additional training. For example, a collaboration in CGH to manage vascular wounds in HaH required nurses to undergo a complex wound care course and attachment to gain competency in wound debridement and Vacuum-Assisted Wound Closure (VAC) Therapy.

Step 3: Explore Practice

In addition to reviewing existing policies and literature, step 3 proposes the exploration of current practice. Nurses who had worked in HaH for at least three months were individually interviewed about the challenges they faced when they took on the nursing role at HaH and what training they thought they would require. Interestingly, the challenges mentioned by nurses from community nursing were slightly different from those who were from inpatient and Emergency Department backgrounds.

Nurses from community nursing felt they were detached from the inpatient work processes. Skill sets required were also different from those needed in community nursing, such as care for intravenous lines and administration of intravenous medications. There was a need to refresh knowledge of intravenous medications and acute disease processes.

Nurses from the inpatient and Emergency Departments highlighted different challenges with the skill of performing physical examinations and knowledge of community resources. The need for independent patient assessment during home visits, exercising clinical decision-making and being adaptable were challenges they encountered that were also commonly addressed when a nurse transitioned into community care (Muhsin et al., 2020).

Common challenges identified by both groups were the ongoing changes in operations, workflow and skillsets required. One suggested that the orientation and community nursing checklist did not truly reflect the work that HaH nurses do and general core competencies for nurses were insufficient to support the complexities of nursing care required in HaH. Both groups unanimously proposed additional training in managing advanced wounds.

Step 4: Translate and Test

Gathering all the data collected from steps 2 and 3, a competency framework (Appendix 1) and training curriculum were crafted by identifying repetitive themes.

Competencies are organized in domains and tiered to three levels: core, unit-based and advanced. This will be planned and discussed with the new onboarding HaH nurse, assigned preceptor, and nurse clinician. Preceptorship is important in the transition of a nurse into the community (Muhsin et al., 2020). Helen Allan Michael Traynor (2022) suggests a minimum of 6 months, up to 12 months, is recommended in the context of a student transitioning to an RN. A shorter duration of preceptorship may be sufficient for an experienced RN transitioning into HaH, so a 6-month preceptorship is proposed.

Core competencies are those that all RNs should attain within 3 months of joining HaH. These are identified as the basic competencies required to deliver care as an RN in HaH. The level of preceptorship will be highest during this period and adequate support for preceptors should be provided to allow sufficient support and guidance (Helen Allan Michael Traynor, 2022; Muhsin et al., 2020).

Unit-based competencies are those which HaH nurses should aim to achieve within 6-12 months, subject to course and training availability. The level of preceptorship will start to reduce from this point and the nurse should be able to function independently in 6 months.

Having all HaH nurses trained for the advanced competencies may not be logistically realistic, so different nurses may be trained in different skills and knowledge, ensuring an adequate diverse skill mix to manage patients from different specialties.

Based on the competencies, the team further explored the mode of training delivery to develop the training curriculum. Most topics will be covered either via e-learning, courses and workshops or on-job-training with the relevant Advanced Practice Nurses or specialty nurses. Topics such as palliative care, complex wound care and community resources will require clinical attachment with relevant specialties to gain deeper understanding and skills proficiency. The medical and nursing team will also convene fortnightly Mortality and Morbidity sessions that facilitate learning via case discussions.

All newly onboarded nurses will be assigned preceptorship with 3-6 months of orientation. Core and some unit-based competencies will be achieved. Plans for training are ongoing for the unit-based and advanced competencies. Staff who have met the competencies in all the core, unit-based and some advanced competencies feel equipped and confident in managing patients in HaH. They are usually identified as preceptors for onboarding nurses.

Step 5: Report

Steps 2-4 were shared with physicians, Nursing Administrators of HaH, Community Nursing and Nursing Education department, and all nurses in HaH. Their feedback and agreement were sought and aligned.

Step 6: Evaluate, Update and Maintain

Identifying outcome measures will be crucial to evaluating the competency framework. Most nursing quality indicators were designed for hospitals or nursing homes, such as patient falls, pressure injuries and hospital-acquired infections (Montalvo, 2008). These are not applicable to patients who are at home. Currently, there are no clear nursing quality indicators for HaH. It is therefore, difficult to establish specific nursing quality indicators as outcome measures to evaluate the competency framework.

Most of the visits were conducted by nurses alone. From April 2024 to January 2025, 86% of patients and family feedback indicated that nurses always explained things in a way that they could understand. This high percentage of positive feedback reflects the high competency of the nurses in their work.

Step 6 should be an ongoing process; it is proposed that frameworks be updated every 5 years (Batt et al., 2021). With advancements in technology and evolving demands of healthcare needs, the future of virtual care and HaH remains a burgeoning field. Regular review of nurses' competency needs will be crucial to keep current with the evolving demands of HaH. Currently in CGH, unit-based competencies are reviewed by nursing administrators every year.

3. Limitations

The Delphi technique is commonly used in medical curriculum development to collect data and find a consensus of opinions from a panel of experts. Although there was general consensus regarding the training and competency framework within the HaH team at CGH, comprising 10 members from medical and nursing backgrounds, the rigor of the Delphi methodology could not be fully

achieved due to the small sample size of interviewed (Chuenjitwongsa, 2005). It is suggested that an evaluation of the competency framework could be conducted with a larger panel of practitioners. However, we must remain cognizant that patients' complexities, acuity, and specialties may differ among various HaH teams from different institutions, potentially resulting in slightly different competency demands.

4. Recommendations for future research

It is recommended that a Delphi study be conducted among more HaH teams from other hospitals to further evaluate the validity of the competency framework. Qualitative research would also be valuable to gain a deeper understanding of nurses' experiences in transitioning to HaH nursing in Singapore. Additionally, a qualitative study on patients' and families' perceptions of nurses before and after HaH would provide insights into strategies for improving public perceptions of nurses.

5. Conclusion

The competency framework provides an important guide for equipping nurses to manage the unique requirements of nursing care in HaH. As HaH is still relatively new in Singapore, patient profiles and needs will continue to evolve. Consequently, the core and unit-based competencies will need to be reviewed regularly to remain current and effective.

Funding This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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