

Project Title

Implementation of Central Venous Access Device (CVAD) training to General Ward (GW) nurses by ICU Nursing Outreach Team

Project Lead and Members

Project lead: Rebecca Lim Shi Han

Project members: Low Ting Jun, Noormazreen Maswan, Ong Yoke Moi

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group(s) Involved in this Project

Nursing

Applicable Specialty or Discipline

Critical Care

Project Period

Start date: August 2021

Completed date: May 2023

Aims

To have at least 80% of ward nurses be confident in managing Central Venous Access device (CVAD) in the general ward setting.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

The success of this initiative is clearly demonstrated by GW nurses of their proficient management of CVAD catheters to their patients. The introduction of CVAD training is a positive step towards providing high-quality patient care in general wards, ensuring that patients benefit from the existing line upon transferred from ICU/HD to GW.

Conclusion

See poster appended/ below

Project Category

Care Continuum

Inpatient Care

Keywords

Central Venous Access Device (CVAD), General Ward, Training

Name and Email of Project Contact Person(s)

Name: Rebecca Lim Shi Han

Email: rebecca_sh_lim@nuhs.edu.sg

IMPLEMENTATION OF CENTRAL VENOUS ACCESS DEVICE (CVAD) TRAINING TO GENERAL WARD (GW) NURSES BY ICU NURSING OUTREACH TEAM

MEMBERS: REBECCA LIM, LOW TJ, NOORMAZREEN, ONG YM

- SAFETY
- QUALITY
- PATIENT EXPERIENCE
- PRODUCTIVITY
- COST

Define Problem, Set Aim

Central Venous Access Device (CVAD) catheters, such as the central venous catheter or temporary non-tunneled dialysis catheter, are frequently used in the critical care unit. However, in the General Ward (GW) these lines are used to deliver intravenous nutrition, obtaining blood samples, or administration of medication to patients with poor peripheral IV access. These benefits GW patients as it can help in reducing risk of extravasation, infection from multiple accesses, and the requirement for repeated needle pricks for cannula insertion or blood sampling.

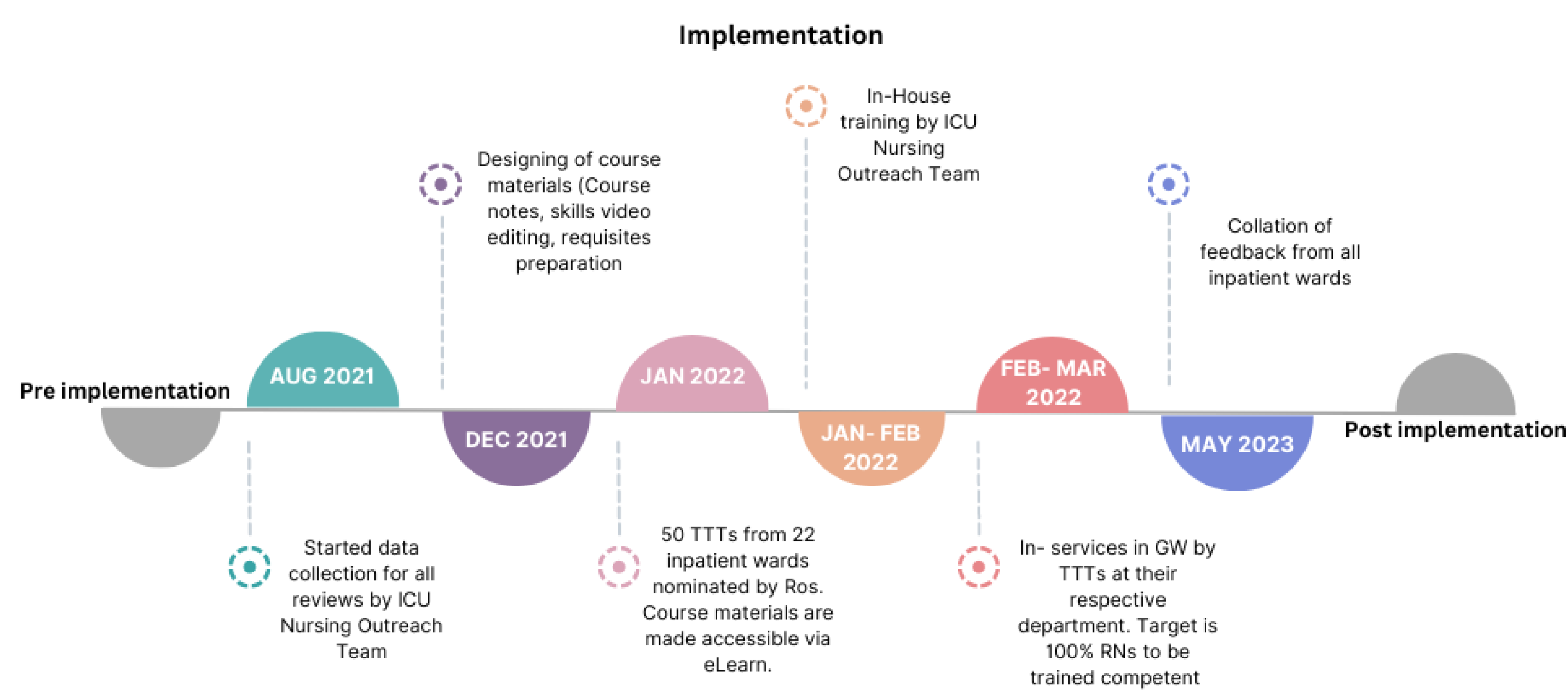
When ICU Outreach nurse review patients (transferred to GW with CVAD catheter), the ICU Nursing Outreach Team realised that these lines were not properly cared. The GW nurses voice their concerns as they were unfamiliar and not trained to manage these catheters. Hence, this leads to underutilization of CVAD in the GW.

Referencing to various studies on Central Line Associated Bloodstream Infection (CLABSI), these lines may impose a higher risk of infection. They can be placed in a wide range of locations and must be carefully monitored to avoid complications. With CVAD's durability, the patient (with difficult peripheral venous access) will continue to benefit from the use of the existing catheter upon the transfer of care from ICU to GW.

In order to dismantle the barriers of critical care beyond ICU wall, ICU Nursing Outreach Team has initiated an in-service training session on educating the GW nurses on the CVAD care and management. Sufficient training materials was developed and made accessible for the nurses reference at all times.

Establish Measures

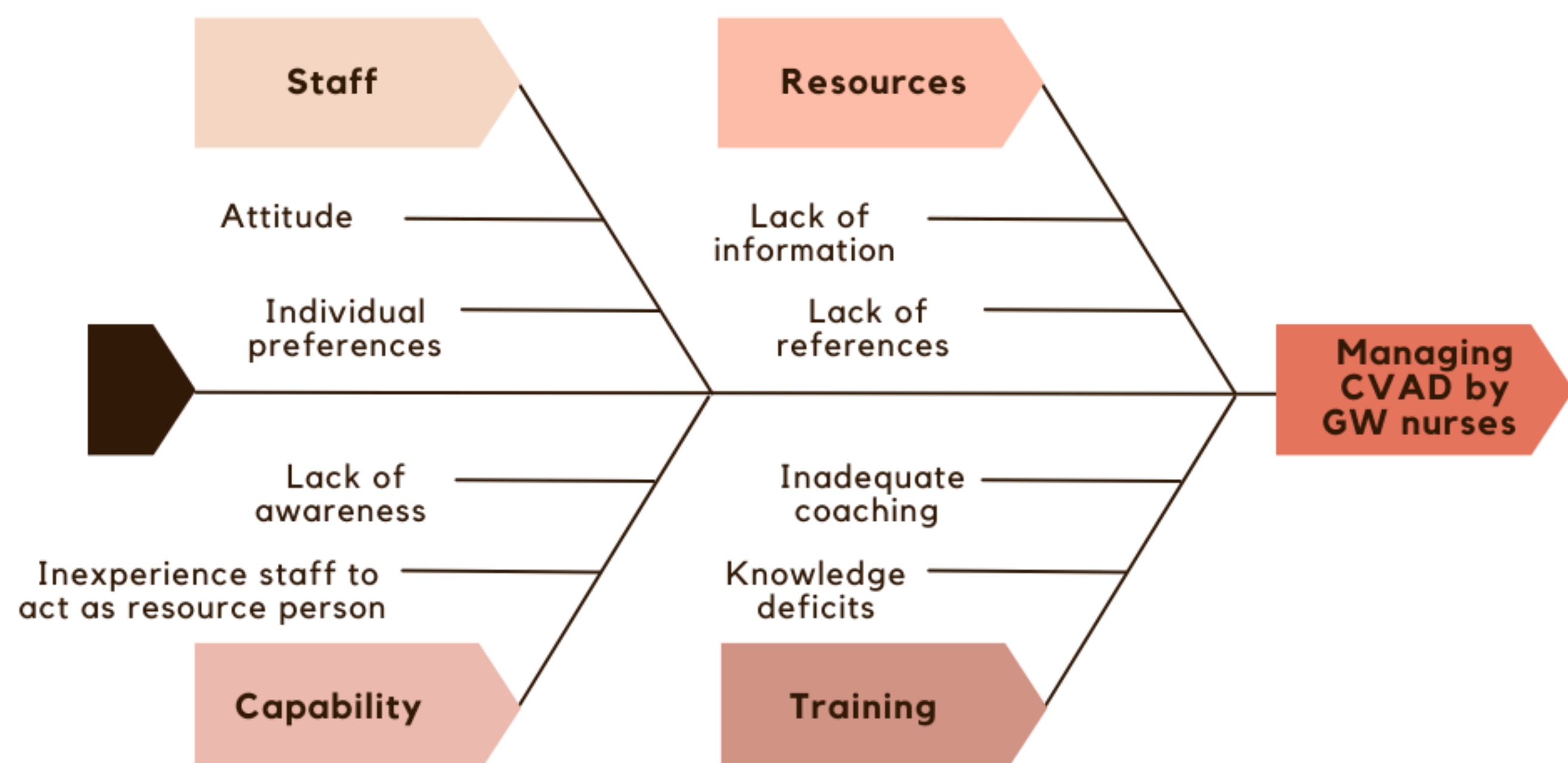
Time Line Chart for the CVAD Training



Analyse Problem

ICU Nursing Outreach Team plays a crucial role and bears great responsibility providing care for patients with CVAD in GW. This includes flushing the line on a regular basis to maintain patency, changing the dressing, and coordinating with the medical team when the line is due for removal. In times of ambiguity, GW nurses would seek ICU Nursing Outreach Team for assistance in managing the CVAD to their patients. Consequently, GW nurses were not actively involved in the care. Such situation may jeopardize patient safety should the ICU Nursing Outreach nurse is unable to respond promptly and provide timely intervention.

GW nurses may be apprehensive about handling CVAD due to its complexity and potential complications. Lack of specialized training and limited familiarity with such devices leads to feelings of uncertainty and heightened anxiety among individuals.



Select Changes

From 17th January 2022 to 6th February 2022, the ICU Nursing Outreach Team provided in-house Train-The-Trainers (TTTs). This training includes theoretical component (via eLearn) and skills competency assessment. These trainers will be the resource person and train the rest of the RNs at their respective departments. All RNs have to be assessed using a standardize competency checklist provided. In addition, ICU Nursing Outreach Team tracked on the completion rate during the given duration for TTTs to complete the competency assessment at their respective department. In addition, an online survey was created for the GW nurses, gathering feedback on the effectiveness of training attended.

Customized training modules were created to address the unique requirement and duties of GW nurses, guaranteeing that the content remains pertinent and practical. This includes:

1. Maintaining line patency and perform proper flushing technique
2. Change of dressing over CVAD site
3. Understand and recognised early signs of complications, such as infections, thrombosis dislodgement of the catheter
4. Assisting the doctor in removal of CVAD, post CVAD removal monitoring
5. Performing Blood Sampling via CVAD

The training program established a balance between academic knowledge and practical application, equipping nurses with conceptual understanding as well as practical competence. Prior to attending the workshop, trainees are expected to attempt the eLearning materials which comprise of slide presentations and skill video demonstrations. They are required to pass the online quiz before proceeding to the skills evaluation. The workshops were then conducted, incorporating hands-on demonstrations and case-based discussions to promote effective learning. Trainees were then being assess on competency using the standardized checklist.

Test & Implement Changes

50 trainers from 22 inpatient departments were nominated and trained. Feedbacks on the CVAD training by ICU Nursing Outreach Team and GW trainers were collected. A total of 55 responses from GW nurses were compiled, with ratings ranging from 1 to 5, with 5 being the highest. The majority of them (Rate 5, 44% and Rate 4, 40%) reported that they gained new information and that they were able to retain information (Rate 5, 35% and Rate 4, 42%). CVAD training has satisfied their learning expectations, according to (Rate 5, 38% and Rate 4, 44%). 52 (95%) of them were able to work efficiently and confidently using the CVAD training skills. However, a minority of them believed that they did not have sufficient hands-on or practice time on a daily basis.

Result

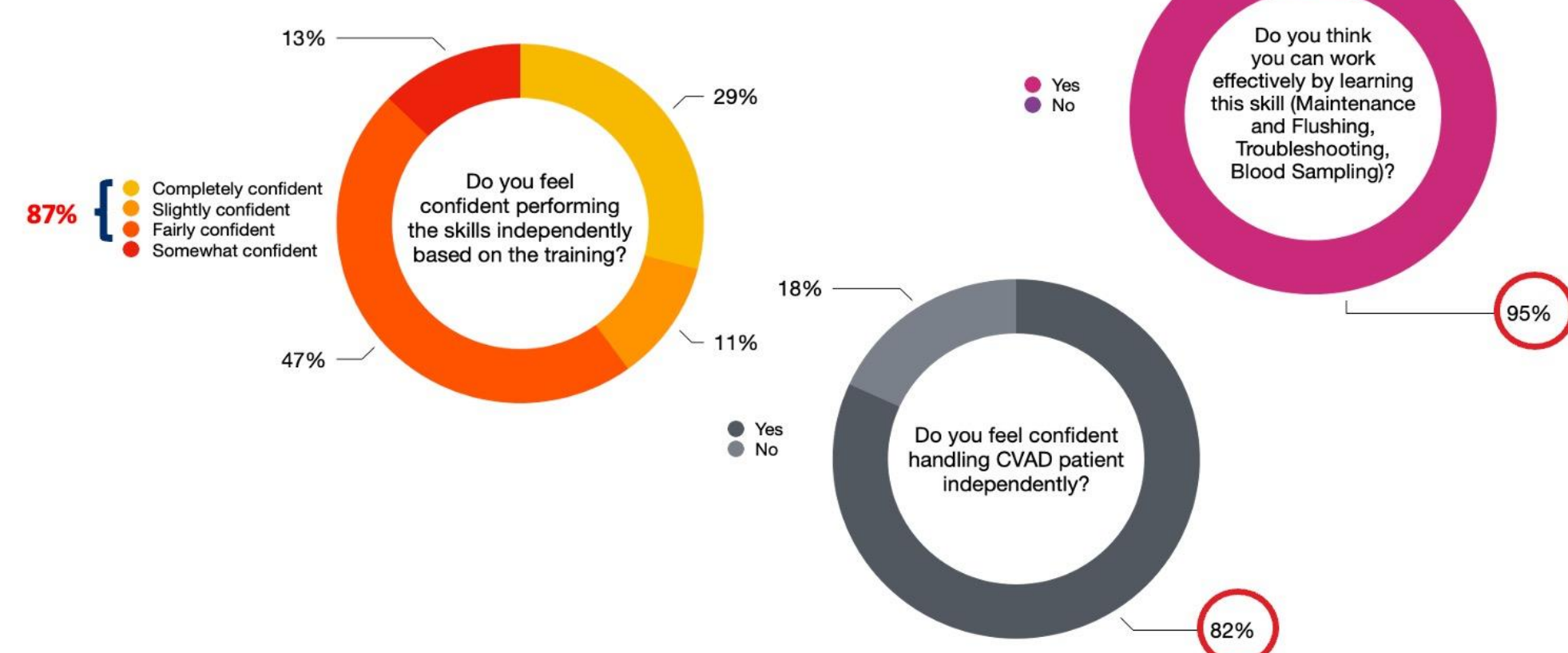


Image 1: More than 80% of them are confident when applying the skills and can function effectively with the skills they have learned.

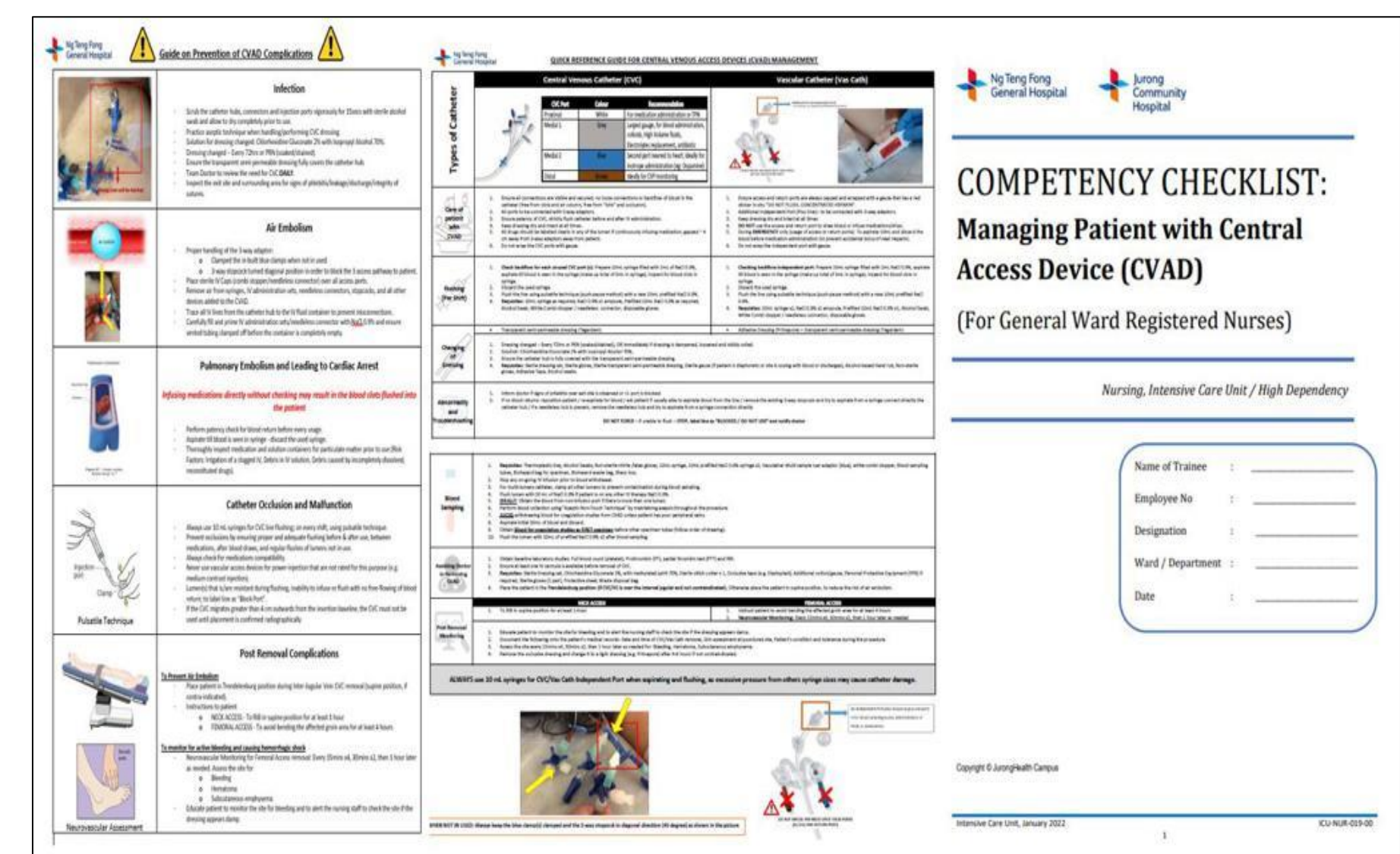


Image 2: CVAD training material for GW nurses

Spread Changes, Learning Points

With the implementation of CVAD training, GW nurses now possess convenient access to suitable materials and assistance, such as clinical guidelines and consultation services provided by ICU Nursing Outreach Team. ICU Nursing Outreach Team and GW nurses are working collaboratively adhering to established guidelines, ensuring safe and effective use of CVAD catheter in the GW.

The success of this initiative is clearly demonstrated by GW nurses of their proficient management of CVAD catheters to their patients. The introduction of CVAD training is a positive step towards providing high-quality patient care in general wards, ensuring that patients benefit from the existing line upon transferred from ICU/HD to GW.