

Implementation of a Quality Improvement Initiative Reduces PICC Migrations in a Complex Continuing Care Hospital

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Purpose

Describe the implementation of a quality improvement initiative which reduced the incidence of Peripherally Inserted Central Catheter (PICC) migrations at a complex continuing care (CCC) hospital. This project was realised in collaboration with an acute care facility.

Purpose

A CCC hospital noted a large number of PICC migrations, and noncompliance to best practices resulting in potential patient harm, delays in infusion therapy, and unnecessary healthcare costs.

- Fifty-four patients had a PICC in situ from January 10, 2014 - February 10, 2015. A total of 60 PICC reinsertions occurred during that time as a result of catheter migration.
- X-ray tip placement confirmation is required prior to use if line migration is suspected. CCC hospital's x-ray services are only available Monday to Fridays, 0800 – 1600. A number of physicians continued to order the use of the PICC without tip confirmation. A few physicians even pulled the line out to create "midline" catheters.
- Patients must be transferred offsite to an outpatient PICC clinic in acute care for PICC insertions. Transfers can have a negative physical and psychological effect on patients which are more pronounced in an elderly population (Ouslander, Perloe, Givens, Kulge, Rutland, & Lamb 2009).
- Increased workload for nurses at the CCC hospital and at the PICC clinic.

Potential reasons for external migration of the PICC catheter at CCC:

- Change of patient population requiring long term use of the PICCs
- Inadequate dressing changes by nurse

Background

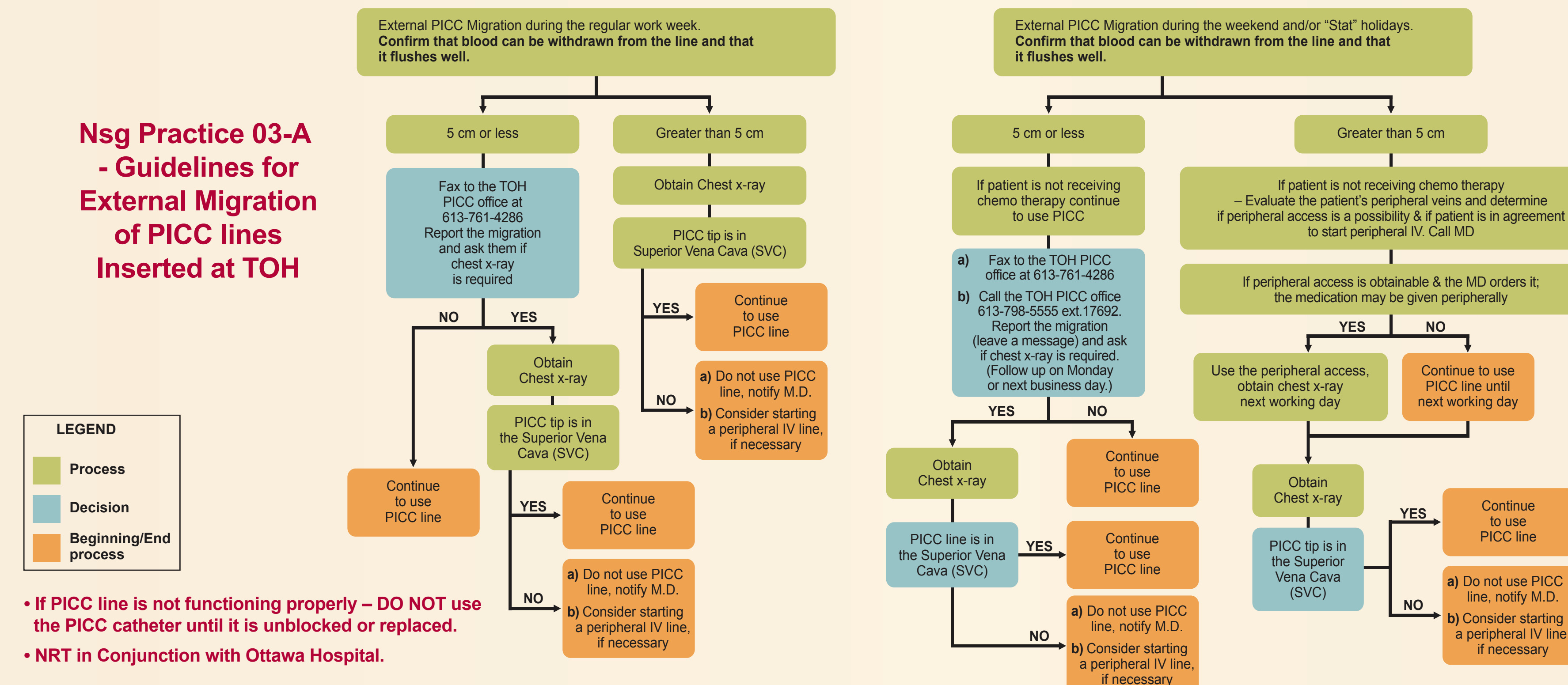
This initiative occurred at a 336 bed hospital which is the sole provider of complex continuing care in Ottawa, ON.

Programs	No. of Beds
Specialized Complex Care: <ul style="list-style-type: none"> • Patients with progressive disease and multiple medical conditions that require ongoing monitoring by an interprofessional team. Including: Dialysis, Complex, Ventilator, Wounds, Bariatric 	101
Transitional: <ul style="list-style-type: none"> • Assisting patients with the coordination and continuity of health care as they transfer from one healthcare setting to either another or to home. 	100
Supportive: <ul style="list-style-type: none"> • Patients with severe functional impairment and require a higher level care than what can be provided by community agencies. 	92
Restorative: <ul style="list-style-type: none"> • Care aimed at functional improvement over an extended period of time. 	43

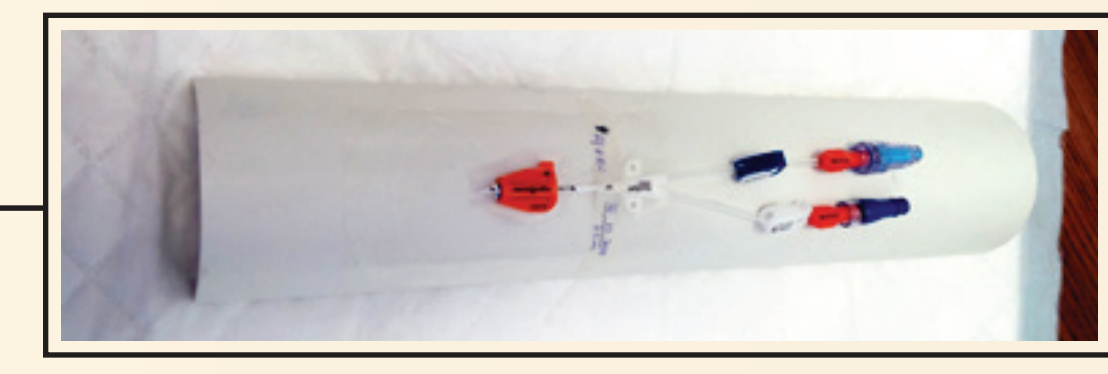
The PICC clinic, at the nearby acute care facility, is responsible for the majority of CCC patients PICC insertions, and trouble-shooting including addressing line issues and migrations.

Methods

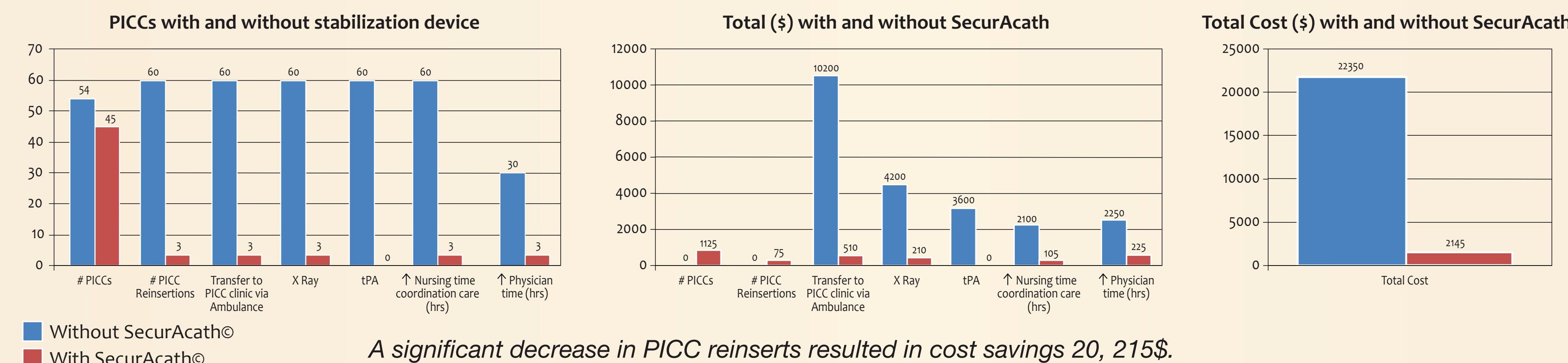
1. A Force Field analysis tool based on Lewin's change theory was used to assess the prospect of change and to identify barriers and facilitators for change resulting in strategies for improvement (Lewin, 1951 & Brager & Holloway, 1992).
2. Collaborated with the Advanced Practice Nurse of the PICC to develop guidelines for PICC migration centered on evidenced-based practice.



3. A revision of hospital PICC policy to include the new guidelines as well as care and maintenance of stabilization device.
4. Insertion of a stabilization device - SecurAcath® - to prevent catheter migration.
5. Use of a variety of clinician education strategies including best practice recommendations for nurses and physicians re: revised policy and stabilization device.
 - a. Communication of the initiative to clinical teams, managers, and physicians (verbal, emails, internal website, etc.);
 - b. Teleconference to reach the physician group;
 - c. In services provided to nursing staff during all shifts (on all units) at start of implementation and six months post implementation.
 - d. Hands on education at the bedside for nurses during PICC care and maintenance;
 - e. Stabilization device's product educational videos posted on the CCC hospital's internal website.
6. Use of quantitative and qualitative evaluation strategies.



Results



Post-implementation: three reinsertions from February to September 2015 noted. An estimated 10, 149\$ of savings is noted on patient transportation to PICC clinic alone. There was no documented external migration on patients with the PICC stabilization device in situ. Soft savings were revealed through reduction of clinician time coordinating care and ease of manipulating PICC during care and maintenance.

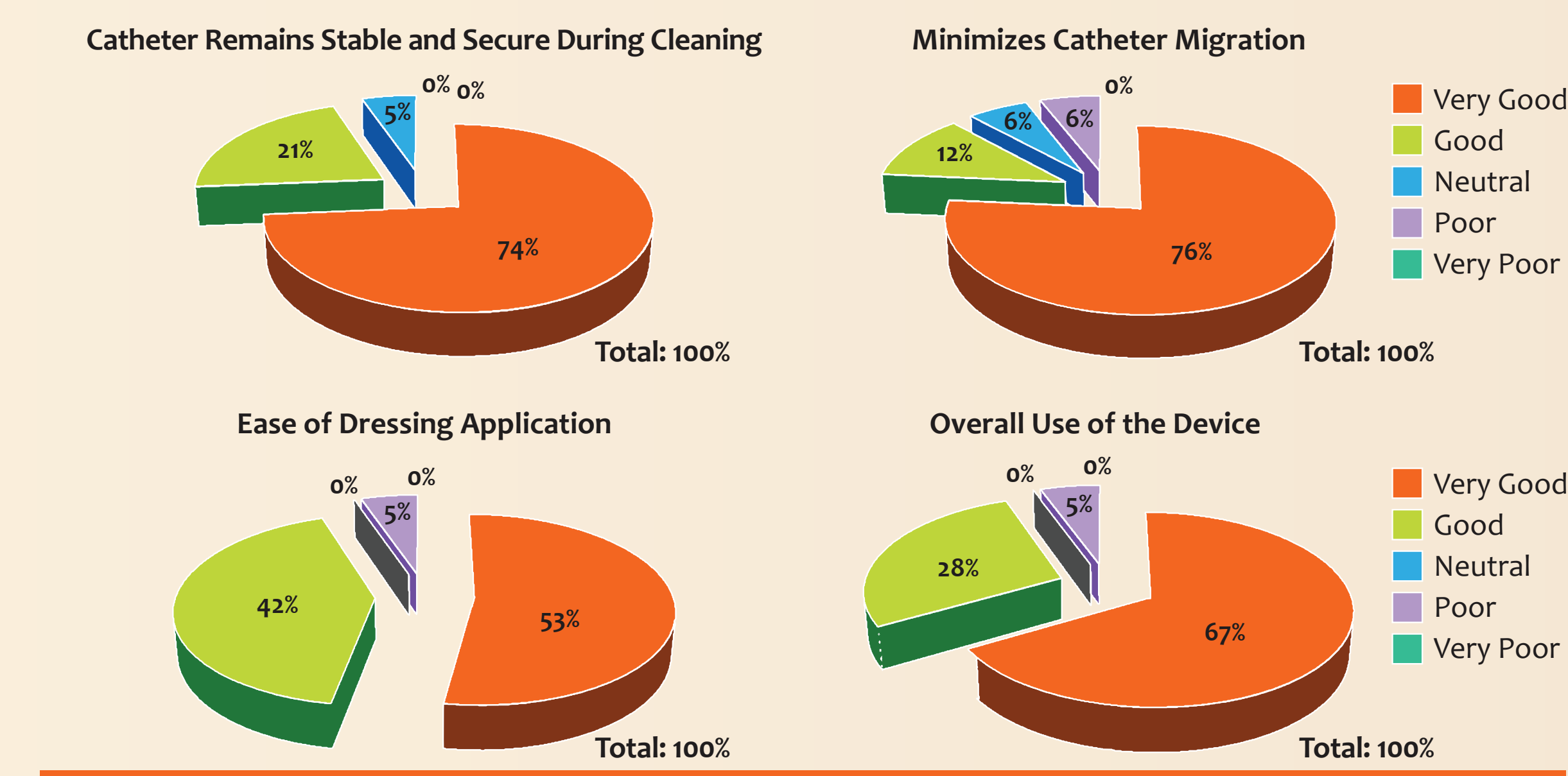
Evaluation

Quantitative: Measured success indicators by comparing pre and post project data including:

- Retrospective chart review using a chart audit tool to identify frequency of PICC migration and cross verification with health records and data from pharmacy to confirm use of tissue plasminogen activator (tPA). Collect migration rates with tPA treatment.

Qualitative

- Each education strategy was evaluated throughout the project to gather feedback on content and delivery for continual improvement.
- Post project surveys measured:
 - Patient satisfaction related to their experience with the stabilization device insertion, care, and maintenance.
 - Nursing satisfaction of education strategy and material received.
 - Nursing perception of the ease of care and maintenance (i.e. dressing changes) of PICCs with stabilization device.
 - Physician satisfaction with the nursing care after PICC bundle implementation (anecdotal).



Recommendations

- Use a recognized tool such as the Force Field Analysis developed by Lewin (1951) to inform decision making when planning and implementing a change within an organization. The Force Field Analysis provided structure for assessing and identifying factors needing to be addressed and monitored throughout the initiative to be successful.
- Integrate multiple interventions and strategies within an implementation plan to increase the chance of clinician acceptance. For example, the CCC hospital combined several education approaches and incorporated PICC migration guidelines into hospital policy with the application of a stabilization device at PICC insertion site to reduce catheter migration.
- Collaborate and build partnerships with many health care organizations to continually improve patient care. This collaborative quality improvement initiative between regional partners reduced PICC migration resulting in improved patient satisfaction and outcomes with a decrease cost to the healthcare system.

Reference

Ouslander, J. G., Perloe, M., Givens, J. H., Kulge, L., Rutland, T., and Lamb, G. (2009). Reducing potentially avoidable hospitalizations of nursing home residents: Results of a pilot quality improvement project. *Journal of the American Medical Directors Association*, 10(9), pp. 644-652.

Lewin, K. (1951). *Field theory in social science*. New York: Harper & Row.

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