

MAKING IT EASY FOR THE FRONTLINE STAFF TO DO THE RIGHT THING-FIRST TIME, EVERY TIME

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“As patients transition through the labyrinth of outpatients, hospital and post-acute care settings, it is imperative to do what's right in their vascular access voyages”
Chopra, 2016

INTRODUCTION

Peripherally inserted central catheters (PICCs) carry a high risk for movement and migration. Successful securement protects the PICC from several sources of failure and prevents movement during all phases of care⁴. When a PICC moves in the vein, it can have life-threatening consequences:

- Vein trauma
- Blood stream infection
- Delayed treatments
- Thrombosis
- Vein perforation
- Catheter tip migration

Christchurch Hospital places approximately 1,672 PICC per year with a proportion of these removed prematurely due to migration or accidental removal. Replacement is required in a number of these patients.

OBJECTIVES

- Zero PICC migration
- Use one stabilization device for the life of the PICC
- Decrease CRBSI
- Offer a stabilisation solution for patients who have skin reactions/dermatitis
- Increase staff confidence during cleaning and dressing
- Increase patient satisfaction and safety

METHODS

- Research was conducted to find a technologically advanced securement device not reliant on the patient's skin surface^{1,2,3,4}.
- The Healthcare and Technology Synergy Framework formed the foundation of the trial which includes the conceptual variables of patient, product and practice components⁴
- A SecurAcath™ - subcutaneous sutureless securement device was chosen, and clinical trial established to determine if a positive outcome could be achieved
- Approval received from CDHB CVAD Governance group
- Trial area a busy general surgical ward, control group Bone Marrow Transplant Unit
- Education provided for the PICC team and ward staff
- Fifty one (51) SecurAcath™ placed and tested over four(4) months between June 2015-October 2015
- Weekly ward rounds, patient interviews and product evaluations carried out
- Data recorded included: Device failure, PICC migration, breakage, infection, blood stream infection, securement success, skin damage, nickel allergy and patient /staff satisfaction.

Table 1 . Pre-trial PICC migrations between 2014 - 2015 in the two pre-trial areas

Pre-Trial:	
179 PICCS inserted 2014-2015	\$70,005
24 Migrations requiring re-insertion	\$9,480
TOTAL COST	\$79,485

RESULTS

- SecurAcath™ provided effective securement in preventing PICC migration with increased staff confidence across all phases of the dressing procedure
- Added advantage for patients with skin reactions/topical dermatitis. Only required sterile gauze and tape allowing skin recovery
- Patients history of previous PICC migration, compromised vascular access or upper arm anatomical issues 'made a difference' to their PICC journey and treatment outcomes
- Unnecessary and unscheduled PICC re-insertions at a cost of \$395.00 per insertion
- No device related infections reported. Particularly significant BMTU reported no increase in infections. (Cost of treating CRBSI is estimated to be \$20,000 - \$50,000 per infection)
- Removal of device required training. Once mastered removal became less of a challenge.

Table 2. PICC migrations during trial June, 2015 - October, 2015

Trial:	
51 PICCS inserted	\$20,145
3 migrations (patient assisted) requiring re-insertion	\$1,185
TOTAL COST	\$21,330

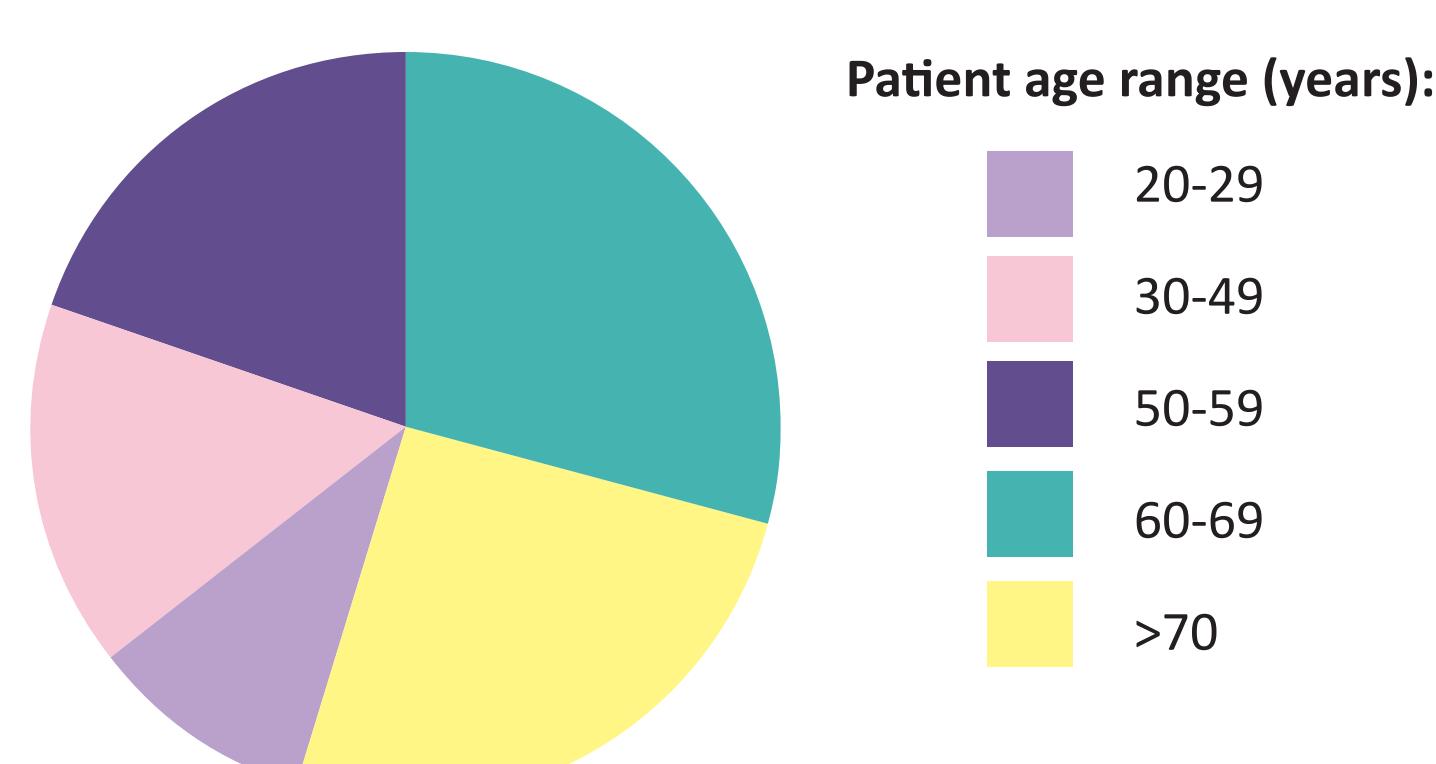


Figure 1. Patient age and gender (Males = 28; Females = 23)



Figure 2. Migrated PICC

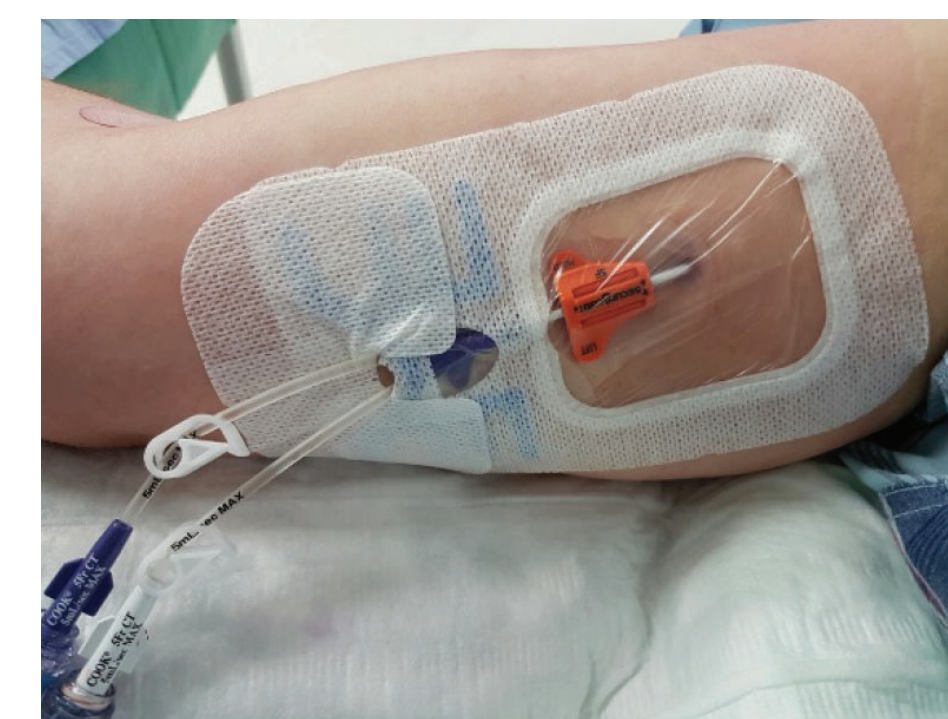


Figure 3. PICC secured with SecurAcath™

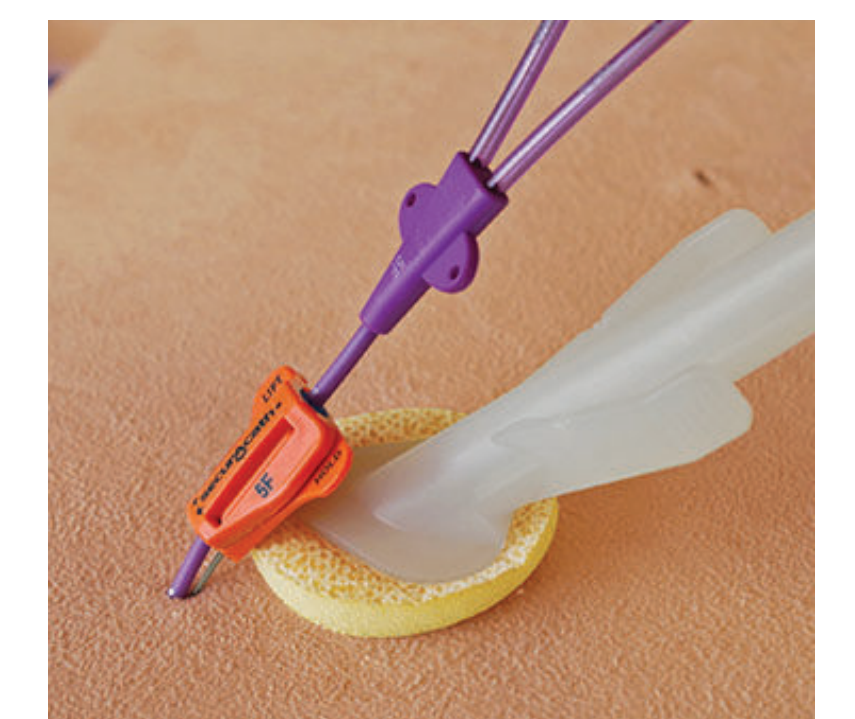


Figure 4. Allows for 360° cleaning

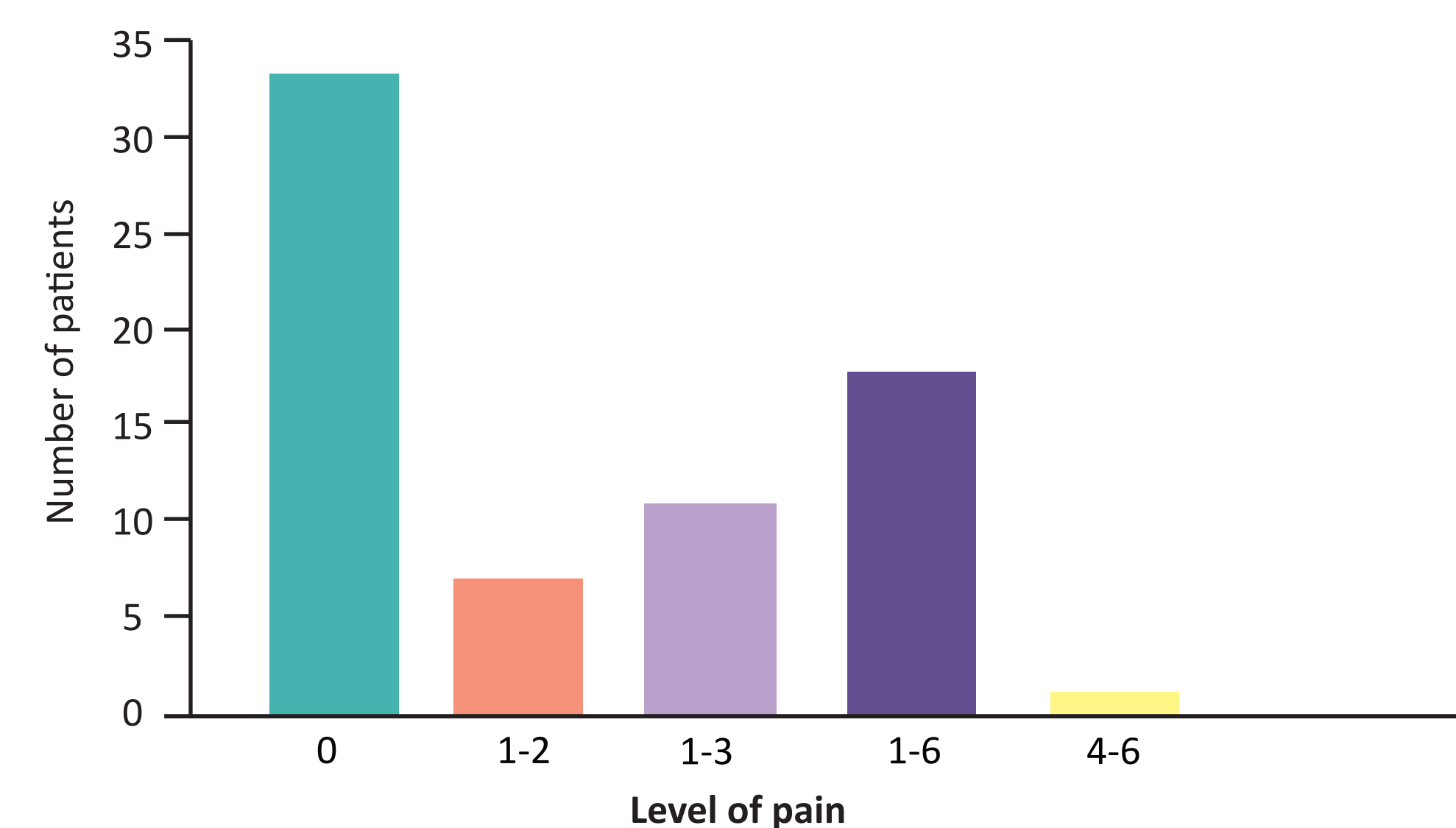


Figure 5. Level of pain reported by patients on removal of SecurAcath™

Table 3. Number of device related incidents during trial

Types of device related incidents	Trial period				
	June	July	September	August	October
Breakage	0	0	0	0	0
Device failure	0	0	0	0	0
BSI	0	0	0	0	0
Skin tear	0	0	0	0	0
Nickel allergy	0	0	0	0	0
Kinking PICC	2	0	0	0	0
Twisted in device	1	0	0	0	0
PICC migration	3	0	0	0	0

Table 4. Annual cost insertions / re-insertions

Total PICC inserted per year	1650
Cost per insertion	\$395,00
Total cost:	\$651,750
Estimated PICC migrations per year	140
Cost of replacement	\$55,300
Overall cost:	\$707,050

CONCLUSION

“Innovation distinguishes between a leader and a follower”
Steve Jobs

SecurAcath™ is effective for PICC securement providing a safe environment for both patients and staff. We have demonstrated that:

- No migrations equated to reduction of therapy disruption, non-compromised patients (Table 2)
- Allowed for easier 360 degree cleaning at the site, decreased PICC migration and dislodgement, increased staff and patient satisfaction. Patients liked the security that SecurAcath™ offered (Figure 4)
- The project resulted in a cost saving both financially and to the patient through better PICC management and care (Table 4)
- An unintended but positive consequence of the trial has been improved staff confidence, capability, critical thinking and communication when managing PICCs
- Importantly it has shown us the value of education, processes and systems that reinforce, encourage and monitor critical behaviours to ensure patient safety
- Based on results SecurAcath™ has been introduced across the CDHB.

By providing a product that is effective we can make it easy for the front line staff to do the right thing, first time every time.

Conflict of interest:
No known conflict of interest.

Acknowledgements:
Nursing Staff involved in the trial; Radiology Clinical Manager and PICC nursing team.

References

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