CHANGING MINDS AND PRACTICE

Cessation of CXR for confirmation of PICC tip placement and increasing nursing scope of practice to release PICC lines for immediate use
• PICC Tracking Confirmation System and ECG tip placement technology
• Gaining buy-in
• Changing Clinical and Nursing Scope of Practice
What is TCS/ECG?

- Integrated magnetic tracking and electrocardiograph-based PICC insertion and tip confirmation technology
- Facilitates correct placement into the SVC via catheter tracking during insertion
- Ideal tip placement at the CAJ is achieved by visualisation of P wave changes as the PICC descends the SVC, passes the level of the sino atrial node and enters the RA
How does it work?

- A magnet in the tip of the guide-wire enables tracking of the catheter as it progresses along the vessel – malpositions are quickly and easily identified.

- The PICC becomes an internal ECG trace – P wave changes indicate where the line is sitting in relation to the lower CAJ.
ECG changes
So how accurate is ECG? References:


Benefits of standalone ECG tip placement

- Reduce treatment delays by releasing lines for immediate use post insertion = improves patient safety and < LOS
- Patient satisfaction
- Cost savings – CXR/Radiology
- Resource savings (time) – MO, Nursing, Radiologist, Wardsman
- Improved line outcomes (safety/longevity) due to accurate tip placement at ideal location
What’s the big deal about tips being placed at the CAJ?

Between 5th and 6th thoracic vertebrae/rib

Carina
Parallax
Case Study
Project Alignment to the Nursing Practice Decision Flowchart

**Activity Achieves Beneficial Client Outcomes**
- Improve patient outcomes (timely access): Reduced time to treatment delay, decrease length of stay, and facilitates patient satisfaction. Improved line outcomes - longevity and safety due to increased first pass accuracy of placement.
- Resource saving: Cost, time, equipment, staff (through avoidance of radiology and medical officer involvement).

**Scope/Integration**
- Not within current scope of practice.
- Wish to integrate this activity into nursing practice.

**Lawful Authority + Professional Consensus**
- Is the activity permitted by legislation? Silent on the issue (not specifically addressed).
- Supported by professional standards and evidence? Yes, wealth of research and literary support, endorsed by Australian Clinical Excellence Council (CEC), the practice is already adopted within the local district, nationally and globally.

**Risk Management**
- Potential risks: Incorrect interpretation of the TCS/ECG data (adverse outcomes related to line malposition and consequent malfunction).
- Strategies to minimise risk: Considered selection of insertors (CVAD experts, senior clinicians who understand clinical context and level of accountability). Comprehensive, robust theoretical training. Clinical supervision. Appropriate accreditation process to practice independently.

**Organisational Support**
- Is there organisational policy to support performing the activity? Post endorsement amend CVAD policy via governance committee to reflect approved use of technology and change in nursing scope and practice.
- Have other stakeholders been involved in the planning? Cardiology and Radiology, Products committee, Nursing Practice Committee chaired by Director of Nursing & Midwifery, Cancer Services, and Clinical Practice Improvement Unit (governance).

**Preparation & Experience**
- Appropriate education, supervision and competence assessment by qualified person to prepare for activity: Via product Clinical Nurse Consultant.
- Competence maintenance: Safe level of return practice assured through select, limited group of insertors, inserter attendance at networking meetings across district, clinician responsibility to maintain knowledge of best practice guidelines and evidence, and product updates.
- Measure outcomes: Record and evaluate line outcomes. Present at local quality and safety meetings.

**Organisational Capacity**
- To support this activity, does the organisation have a sufficient quality and risk management framework? Yes.
- Sufficient staffing levels? Train select Clinical Nurse Consultants to ensure demand is met without adverse impact on other job roles.
- Access to other health professionals? Practice development and training opportunities available through interhospital networking and collaboration with qualified, experienced clinicians across the district.
Step 1: Patient benefits

- Activity achieves beneficial client outcome:
  - Prompt vascular access: < treatment delays = better patient outcomes
  - Greater safety & longevity of lines
  - Facilitates patient satisfaction
  - Organisational benefits = monetary + resource savings
Step 2 & 3: Scope, integration

- Scope of practice = No

- Do you wish to integrate this activity into your own nursing practice? Yes
Step 4: Authority + professional consensus

- Is the activity permitted by legislation? silent on the issue – not specifically addressed

- Supported by professional standards and evidence?

  Multiple published literature,
  
  Endorsed by CEC,
  
  Practice adopted globally and locally (813 hospitals in the U.S. have ceased routine CXR)

Proposal to: Amend local policy to include use of technology + advanced nursing scope of practice – including guidelines regarding training, sustained safe practice and documentation requirements
Step 5: Risk management

- Potential risks:
  Incorrect interpretation of the TCS/ECG data = adverse outcomes related to line malposition and consequent malfunction.

- Strategies to minimise risk:
  Considered selection of practitioners (CVAD expert, senior clinicians) (understand level of accountability)
  Comprehensive, robust theoretical training.
  Clinical supervision.
  Appropriate accreditation process to practice independently.
Step 6: Organisational Support

- Product review undertaken and consequently endorsed:
  - Clinical endorsement: Head cardiologist and radiologist
  - Director of Medicine
  - Local products committee
  - Cancer Services
  - Hospitals Nursing Practice Committee (NPC) (chaired by Director of Nursing & Midwifery) and CS NPC
Step 6: Preparation & experience

- Appropriate education, supervision and competence assessment by qualified person to prepare for activity:

  Education, supervision, accreditation undertaken via product Clinical Nurse Consultant

  New clinicians to be supervised and accredited by experienced hospital employee
Step 6: Preparation & experience

- Competence maintenance:
  
  Select, limited group ensures safe level of return practice

  Attendance at networking meetings across district

  Clinician responsibility to maintain knowledge of best practice guidelines and evidence and product updates

  Document and evaluate outcomes
Summary:

- Addressed all organisational expectations and requirements
- Addressed all requirements of the NMB Nursing Practice Decision Flowchart
- Demonstrated clear patient, professional and organisational benefits
Enablers:

Access to persons of authority
Evidence (literary)
A voice
Courage
Conviction
Tenacity
Tenacity is setting a goal so BIG you can't possibly achieve it ... then growing into the person who can!

Thank you 😊

Questions?
Benefits of nurse inserters using TCS

- Patient: satisfaction and quality of care
  - Availability of service (immediate), improves accessibility and therefore ability to meet best practice guidelines and patients need in terms of reliable vascular access
  - Reduced treatment delays = reduced morbidity (immediate release of lines for use, improved line outcomes)

- Increased job satisfaction of nurse inserters

- Organisational benefits:
  - Monetary (improved line outcomes, reduced treatment delays)
  - Resource (time of clinical staff – ie radiologists, doctors, nurses, wardsmen)
Presented to:

- Nursing Practice committee chaired by director of nursing
- Including proposed alteration to local policy
- Policy change submitted and accepted by governance committee
- Policy and practice changed to reflect altered new practice and altered nursing scope of practice increased
Ingredients for success:

- Access to persons of authority and power
- Evidence (published literature)
- Equipment (the tools)
- A voice
- Courage
- Conviction
- Tenacity
Case Study 1
Questions?
• Changes in **P-WAVE** amplitude allow the clinician to position the PICC tip in proximity to the cavoatrial junction.

• Provides **COMPARATIVE ECG WAVEFORM** to assist in maximum P-wave identification.

• Lead II