

**JOHN HUNTER HOSPITAL INTENSIVE CARE UNIT  
PRACTICE AND PROCEDURES MANUAL**

**SUBJECT: PiCCO Connection to Pulsioath Arterial Cannula and Central Line**

**PROCEDURE SECTION: P  
DATE TO BE REVIEWED: 2011**

**OUTCOMES: -**

- 1. Accurate performance of measurements obtained when the patient is connected to the PiCCO monitor**
- 2. Correct use of equipment involved in connecting a patient to the PiCCO monitor**
- 3. Minimise complications associated with connecting a patient to the PiCCO monitor**

**S.W.P.**

**SAFE WORK PRACTICES**

**RISKS:**

- **Exposure to blood and body fluids.**
- **Muscular strain from awkward posture**
- **Manual handling risks associated with patient positioning.**

**CONTROLS:**

- **Wear personal protective eyewear, plastic apron and gloves**
- **Position patient's bed at height suitable for staff involved.**
- **Refer to HAHS Manual Handling Policy.**

**EQUIPMENT**

Pulsion PiCCO plus monitor

Auxiliary cable

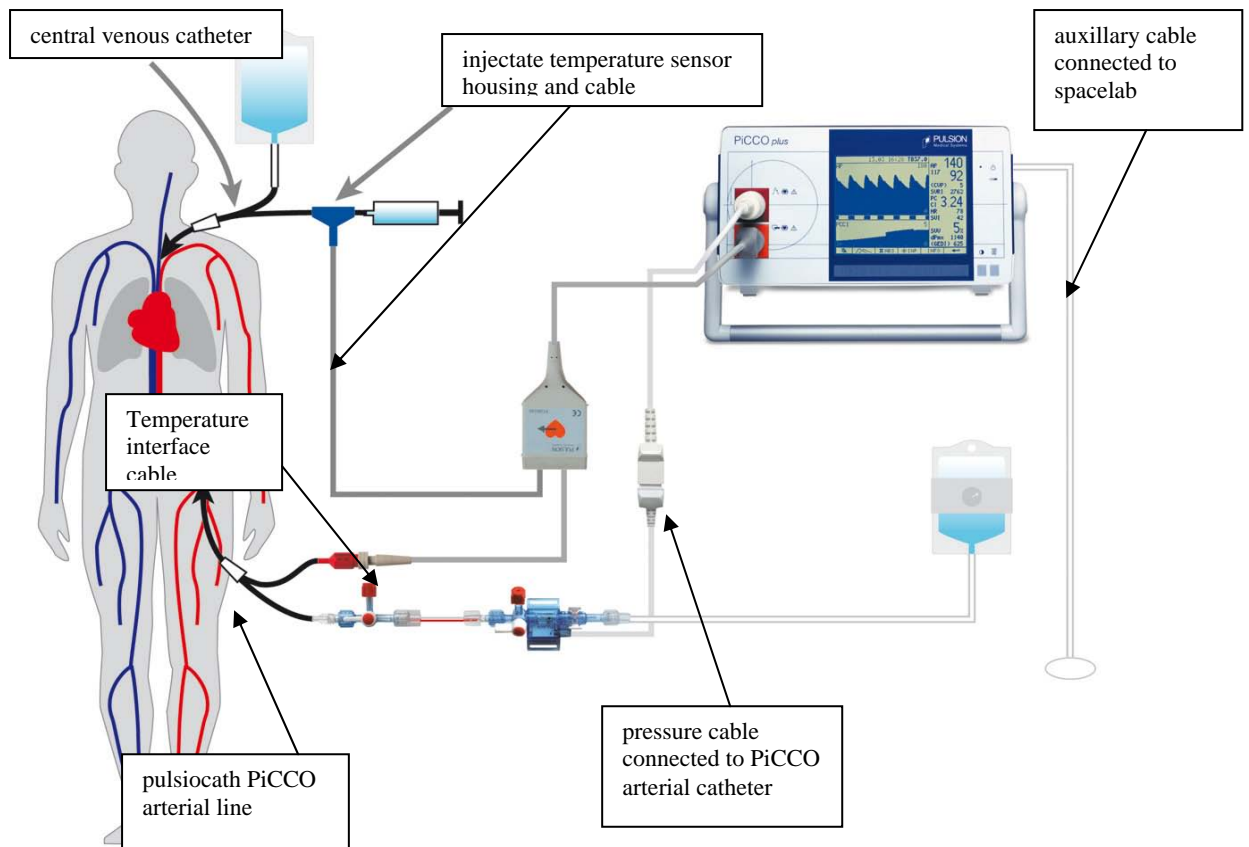
Pressure cable (PMK-206)

Injectate temperature cable and sensor

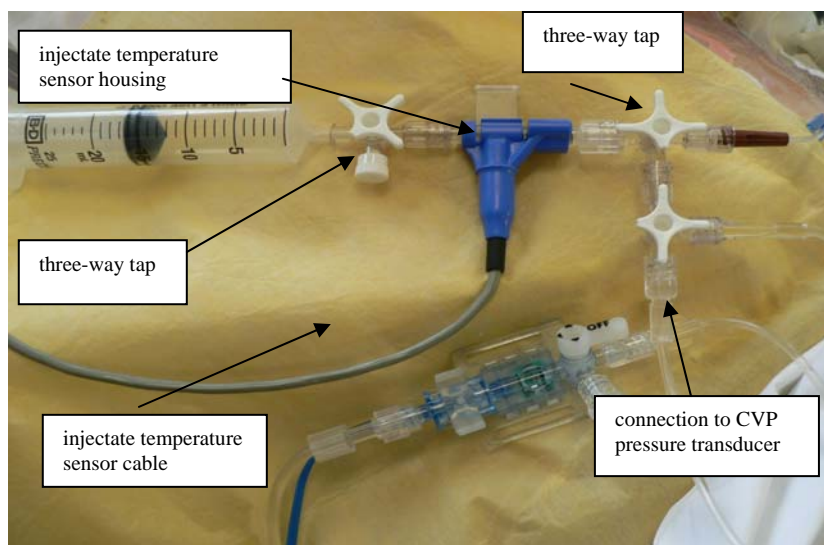
Injectate temperature housing (see PiCCO arterial catheter insertion)

**PROCEDURE**

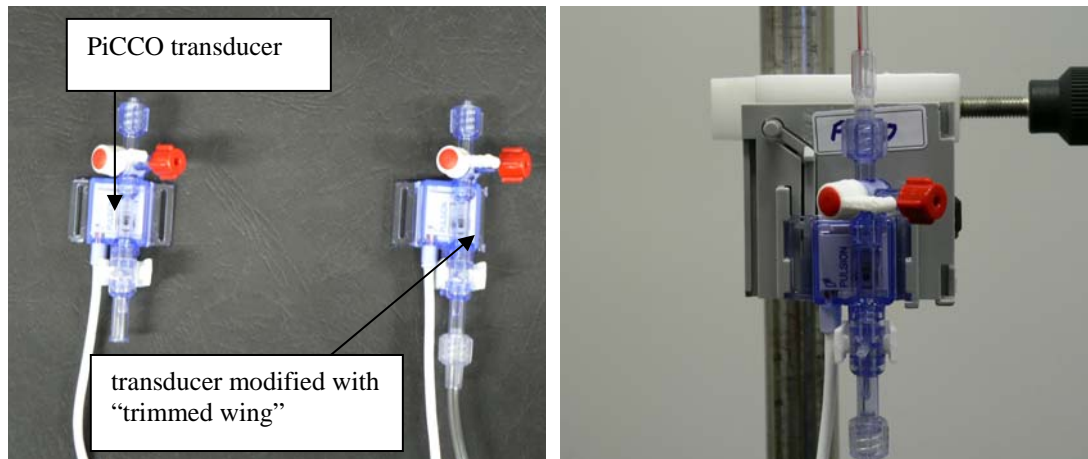
1. At the rear of the PiCCO plus monitor is a mains power cable and an on/off switch. Plug the monitor in and turn it on
2. Also located at the rear is a cable and housing labelled auxiliary cable. This is connected to a pressure module housing on the Spacelab Monitor to enable "slaving" of information
3. At the front of the PiCCO plus monitor is a maroon coloured housing with a pressure waveform label. Connect the pressure cable to this housing and then to the pressure transducer of the PiCCO arterial catheter (see PiCCO arterial catheter insertion)



4. Connect the injectate temperature cable to the orange housing at the front of the PiCCO monitor (see picture above). This cable has two limbs. One limb is the temperature interface cable and is screwed onto the thermodilution connector of the PiCCO arterial catheter.
5. The blue ended limb is the injectate temperature cable and sensor housing and is connected to the injectate temperature sensor at the central line. The injectate temperature sensor is connected to the distal lumen of the central line and it is recommended by the manufacturer to set a three way tap, sensor and another three way tap in a straight line to enable accurate thermodilution measurements (see picture below).

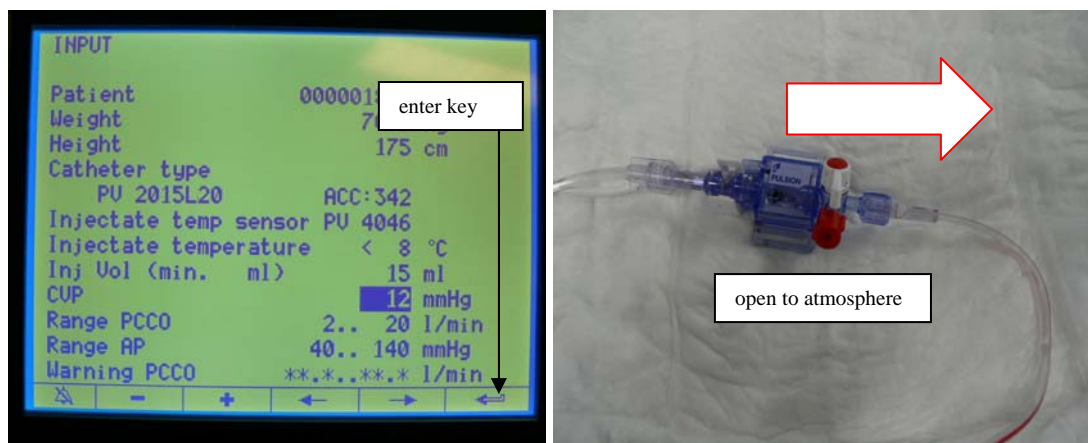


- The arterial line transducer is placed in a manifold affixed to an I.V. pole that is levelled to the phlebostatic axis (4<sup>th</sup> intercostal space mid-axilla). As the PiCCO transducer does not fit a standard manifold, one of the “wings” is trimmed with scissors to allow placement see picture below left).



### ENTERING THE DATA

- Using the PiCCO plus touch screen select new patient “yes” using the plus or minus key and enter using the function key (see picture below)
- The next screen prompts entry of patient information, height and weight must be entered. Use the arrow keys to change the parameter you wish to review and the plus and minus key to adjust the number
- Injectate temperature selected is less than 8 degree Celsius (unless directed by a medical officer)
- Injectate volume selected is 15 mL (or 20mL if the patient weighs greater than 100 kilograms)
- Enter the patients current central venous pressure and select the enter key



- The zeroing menu is displayed. Open the PiCCO arterial line transducer to atmosphere and select the zero key (-o-). At the same time label and zero the slaved waveform displayed on the Spacelab monitor
- Select the enter key and an AP correction screen is displayed. This is used when the transducer is not able to be placed in the same plane as the patient’s heart e.g. the

transducer is not connected to a manifold and levelled with the phlebostatic axis.

8. Select the enter key and the screen will progress to the main display page

**REFERENCES:**

1. Cottis, R., Magee, N. and Higgins, D.J. (2003) Haemodynamic monitoring with pulse induced contour cardiac output (PiCCO) in critical care. *Intensive and Critical Care Nursing*, 19, 301-307.
2. McLean, A and McCartin, V. (2002) Pulsion PiCCO. Wentworth Area Health Service. Retrieved 11<sup>th</sup> July, 2008 from [http://intensivecare.hsnet.nsw.gov.au/five/doc/pulse\\_contour\\_cardiac\\_output\\_PiCCO\\_HM\\_napean.pdf](http://intensivecare.hsnet.nsw.gov.au/five/doc/pulse_contour_cardiac_output_PiCCO_HM_napean.pdf)
3. PULSION Medical Systems (2000) PiCCO Operators Manual Pulsion PiCCO plus, version 5.1
4. Richards, C. (2003) Pulse Contour Cardiac Output (PiCCO). Intensive Care Services Nursing Policy and Procedures, Royal Prince Alfred Hospital. Retrieved 11<sup>th</sup> July, 2008 from [http://intensivecare.hsnet.nsw.gov.au/five/doc/pulse\\_contour\\_cardiac\\_output\\_HM\\_rpa.pdf](http://intensivecare.hsnet.nsw.gov.au/five/doc/pulse_contour_cardiac_output_HM_rpa.pdf)
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