

## Circuit error - 2017

Permission to print:	Yes
Incident type	Near Miss
Type of incident:	Equipment
Catagory	Circuit error
Description:	On setting up and priming the LivaNova HLM pack it was noted that the the CS14 cardioplegia heat delivery set was unable to be primed - the pressure servo regulation stopped the pump. On inspection the [preassembled] one way purge line on the CS14 cardioplegia heat exchanger outlet that incorporates a non return valve was reversed. The purge line was repositioned in the correct direction
Preventive actions	Manufacturer advised
GOOD CATCH - what went	The fault was noted due to the cardioplegia pressure alarms being on and alarming.
Protocol issue	No
Rule issue	No
Skill issue	No
Team Issue	No
Violation	No
Manufacturer advised:	Yes
Discussed with team:	Yes
Hospital incident filed:	No
Ext Authority Advised	No
Procedure acuity:	Elective
Commentary	

Permission to print:	Yes
Incident type	unknown
Type of incident:	Management
Category	Circuit error
Description:	<p>An interhospital transfer of aortic dissection with two cardiac arrests (second witnessed in hospital). The patient was good neurologically post first arrest, unknown after second. Patient had pH 7.11 and lactate 8.3 prior to arrival in OR. Pt cooled to 16 degrees. Cardioplegia circuit flushed to remove potassium then used to deliver antegrade cerebral perfusion with the arterial pump [roller] on and flowing around the recirculation line [1/4"ID]. On recommencement of bypass, the perfusionist forgot to clamp the recirc line. The aorta was de-aired via the femoral cannula out the new arterial cannula in the side arm of the graft. While deairing the surgeon complained that the blood wasn't flowing fast enough. Pump flow [was] increased. The femoral arterial line was clamped and the tubing to the new cannula was primed [from a wye in the arterial line]. The surgeon noticed the blood going backwards down the line. The backflow sensor only alarmed after the pump was turned off to find where the shunt was. The recirc line was clamped and the [arterial] line flushed. De Airing of the central line and cannula appeared successful. Bypass reinstated and patient rewarmed. Patient suffered large stroke. The cause has not yet been determined but may have been insufficient de-airing of the aorta, particulate embolus or from suffering two cardiac arrests and 24 hours of pericardial effusion causing tamponade situation. Poor relationship with surgeon means the perfusionist is uncomfortable discussing this with him to see if he thinks we didn't de-air properly. The relationship has resulted in my second guessing myself and at the end of a case I just walk out thinking thank good nothing went wrong. [Further detail redacted - PIRS Ed]</p>
Preventive actions	be more vigilant
GOOD CATCH - what went	
Protocol issue	No
Rule issue	Yes
Skill issue	Yes
Team Issue	Yes
Violation	No
Manufacturer advised:	No
Discussed with team:	Yes
Hospital incident filed:	No
Ext Authority Advised	No
Procedure acuity:	Emergent
Commentary	<p>The overriding human factors related to this slip lapse error are stress and distraction due to poor team relations. The relationship between the surgeon and the perfusionist(s) creating a high stress environment is a significant risk factor for patient outcome. It is plausible that this is a type of behaviour more widespread that perfusionists are unlikely to report. The RACS has recently made important moves to counter harassment and bullying and the RAC website has a complaints hotline <a href="http://www.surgeons.org/about/racs-complaints-hotline/">http://www.surgeons.org/about/racs-complaints-hotline/</a>. Clearly these matters should be addressed internally in the first instance however the achieving resolution requires an effective</p>

organisational culture. Additional preventive remedies for the slip lapse error more obviously include the addition of a formal check (possibly on a checklist) for shunt closure and ideally in a case of this acuity, the presence of a second perfusionist.. PIRS Ed