

## **Study Protocol for Comparison between NICOM-Cheetah and FloTrac-Vigileo for Cardiac Output Monitoring.**

Patients will be recruited in the Surgical Intensive Care Unit (SICU) upon admission.

### **Inclusion criteria:**

- Patients who are deemed to require cardiac output monitoring
- Patients 21 years old and above
- American Society of Anesthesiologist (ASA) physical status 1 to 4

### **Exclusion criteria:**

- Patients who are not on mechanical ventilation
- Patients who are not in sinus rhythm
- Patients with allergy to adhesive tapes

50 consecutive patients admitted to the surgical intensive care unit (SICU) who are deemed to require cardiac output monitoring by the treating intensivist will be studied.

- Once a patient has been recruited, he/she will have the FloTrac® connected to the arterial catheter and the NICOM Cheetah® electrodes placed on the skin across the anterior thoracic wall.
- The SICU team will inform the study investigator about the recruitment and the data collection form will be filled by the study investigator.
- Cardiac Index, CVP and MAP values will be automatically and continuously recorded by the NICOM Cheetah® and FloTrac® computer. Data will be collected on a 15 minute basis over a 10-hour period using the data collection form and transcribed to a spreadsheet for data analysis.
- All patients will be treated as per department protocols at the discretion of the treating intensivist and no additional intervention will be performed.

### **Statistical Analysis**

This is an observational study and sample size/power calculation is not required. The agreement of the primary outcome (Cardiac Index) between the NICOM Cheetah® and FloTrac® will be assessed with Bland Altman's test. A disagreement of more than 20 percent will be deemed significant.