The introduction and Evaluation of new epicardial pacing guidelines and checklist for the post operative Cardiac Surgery patient

St George's, Epsom & Helier University Hospitals and Health Group

Authors: Michele Stevens, Arjale, Delfinado, Isa Pereira

BACCN Conference

Nottingham 2023

Introduction

The recommencement of Cardiac Surgery following the pandemic, the introduction of a new Pacemaker and increased recruitment of junior staff identified the need for pacing education for nurses at St Georges.

Aims and Objectives

Aims :

- To re-introduce and evaluate a Pacing safety Checklist for nursing staff

Objectives :

- For staff to competently complete a safety checklist for paced patents on CTICU
- For staff to understand the basic functions of the new Osypka Pacing box
- To have identified and trained "Superusers" and link nurses to aid the facilitation of training and compliance of nursing staff
- For nursing staff to have a clearer understanding of the concept of sensitivity
- For staff to understand why to use Back up safely

St George's University Hospitals NHS
NHS Foundation Trust

Cardiothoracic Surgery

REFER TO PACING ALGORITHM FOR GUIDANCE*

Patient label

TEMPORARY EPICARDIAL PACING CHECKLIST

Type of surgery: _____ **Pacing wire type and location:** _____ **Pacing box serial no:**_____

		DAY 0 AND NIGHT CHECKS			DAY 1 AND NIGHT CHECKS			DAY 2 AND NIGHT CHECKS			D3 LD	D3 Night	D4 LD	D4 Night
Time of check														
Underlying rhythm														
Underlying rate														
Indication for pacing *circle one or more*		Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP	Brady AF Backup BP
Pacing mode														
Set rate		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sensing														
A	Sensitivity value (measure P wave)	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
A	Set Auto-sense and record value (should be 1/3 of sensitivity value)	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
V	Sensitivity value (measure R wave)	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV
V	Set Auto-sense and record value (should be 1/3 of sensitivity value)	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV	mV

Methodology

- Revise checklist and guidelines
- Bedside teaching
- Plan to audit in 3months

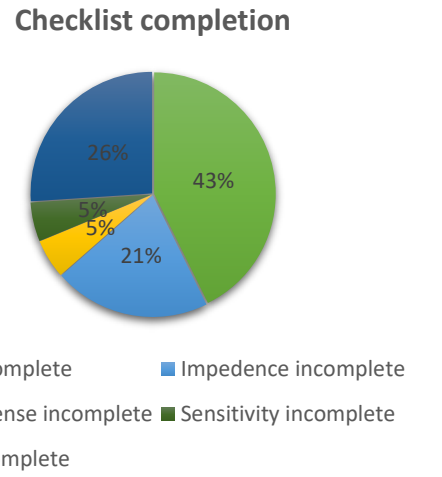
Issues after 4 weeks :

- Continued lack of confidence with the box across all nursing staff
- Identified potential safety issue with setting of sensitivity safely on pacemaker
  Inappropriate setting of Back up mode

Actions

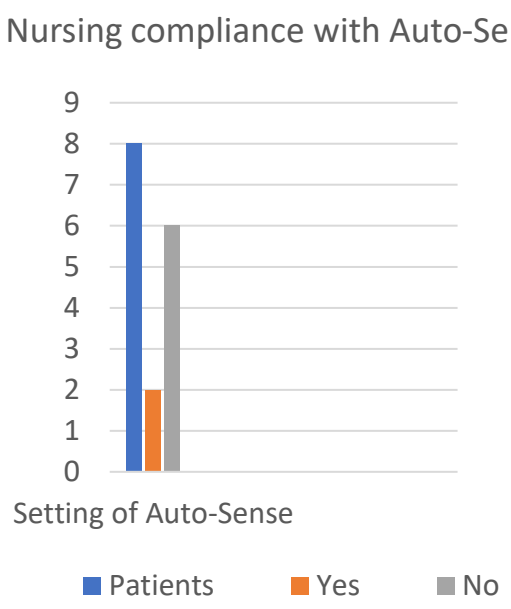
- Revised colour coded checklist
- ↑ teaching
- Introduction of AUTO-SENSE
- Review of Back-up guidelines
- Reaccreditation competency
- Audit in 3 months

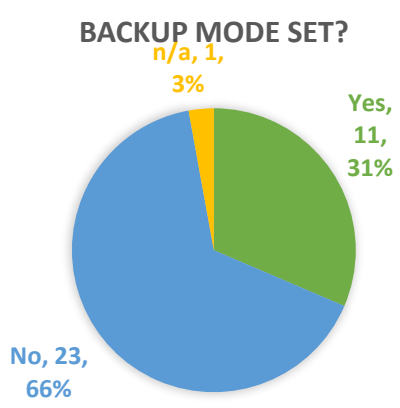
Results after 3 months

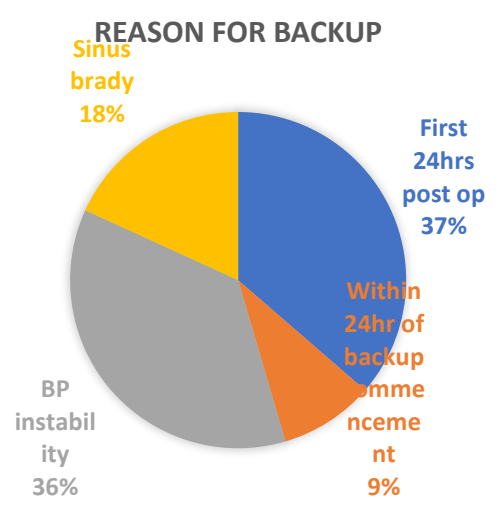


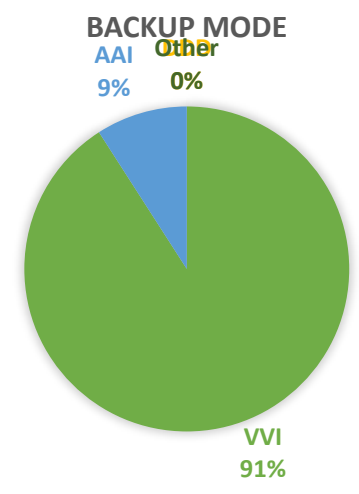
Results – after 2 weeks:

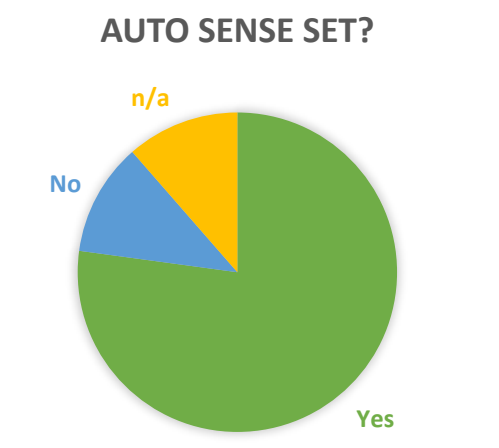
- Mini Audit over 1 week on 8 patients to check understanding of AUTO-SENSE setting
- Most patients did not have Auto-sense set











Conclusion and actions

- ↑ teaching on Auto-Sense
- Safety checks video
- Audit after 3 months

Results after 3 months

- The checklist is being filled in, so nurses are checking the safety/setup of the box. However, a significant number are not fully completed, suggesting further education and familiarity. Impedance in the context of pacing is a new concept to all staff and wasn't prioritized as it wasn't directly affecting patient safety.
- AUTOSENSE has been adopted successfully.
- Backup mode is still commonly used, but now nurses are understanding the need to use VVI only, despite a lack of understanding of indications for Backup.

Recommendations and future work

- ↑ medical staff and ward nurse Pacemaker education
- Introduction of the checklist as a handover tool between surgical/medical staff and nurses
- The addition of Pacing checks and managing emergencies to CALS study days

Overall conclusion

Cardiac Critical Care Nurses compliance with the checklist means safety is optimized. Furthermore, it has prompted nursing staff to question indications for pacing and the need for prolonged periods on Back-up pacing