

Application of Temporary Cardiac Pacing (TCP) in the CVICU by Registered Nurses

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WHAT IS TEMPORARY CARDIAC PACING?

- ❖ Temporary cardiac pacing or TCP is the use of an external pacemaker to deliver an electrical current to the heart to increase the patient's heart rate
- ❖ TCP is a delegated controlled act (DCA) which can be delegated to and performed by a RN in the CVICU

WHY IS TCP IMPORTANT?

- ❖ TCP is required for patients who exhibit sudden symptomatic bradycardia (low heart rate)
- ❖ Certified RNs may implement this medical directive decreasing the time to initiation of therapy
- ❖ Timely TCP application may prevent further deterioration
- ❖ CRITERIA FOR IMPLEMENTATION:
 - ❖ Sudden decrease in heart rate to ≤ 45 beats/min
 - ❖ Systolic blood pressure ≤ 85 mmHg WITH a heart rate ≤ 45 beats/min

PURPOSE OF THE PROJECT

To educate and certify the CVICU RNs in the initiation of TCP on the post-operative surgical patient

OBJECTIVES

- ❖ Collect data (8-week period) on the application of TCP in the CVICU
- ❖ Develop and submit the Medical Directive and/or delegation to stakeholders
- ❖ Develop the RN educational package
 - ❖ Quiz
 - ❖ Competency/Skills List
 - ❖ Educational Presentation
- ❖ Provide education to RN staff for certification
 - ❖ Exam
 - ❖ Practical Simulation

VISION STATEMENT

To provide training and certification to all CVICU RNs in the application of TCP by October 2013

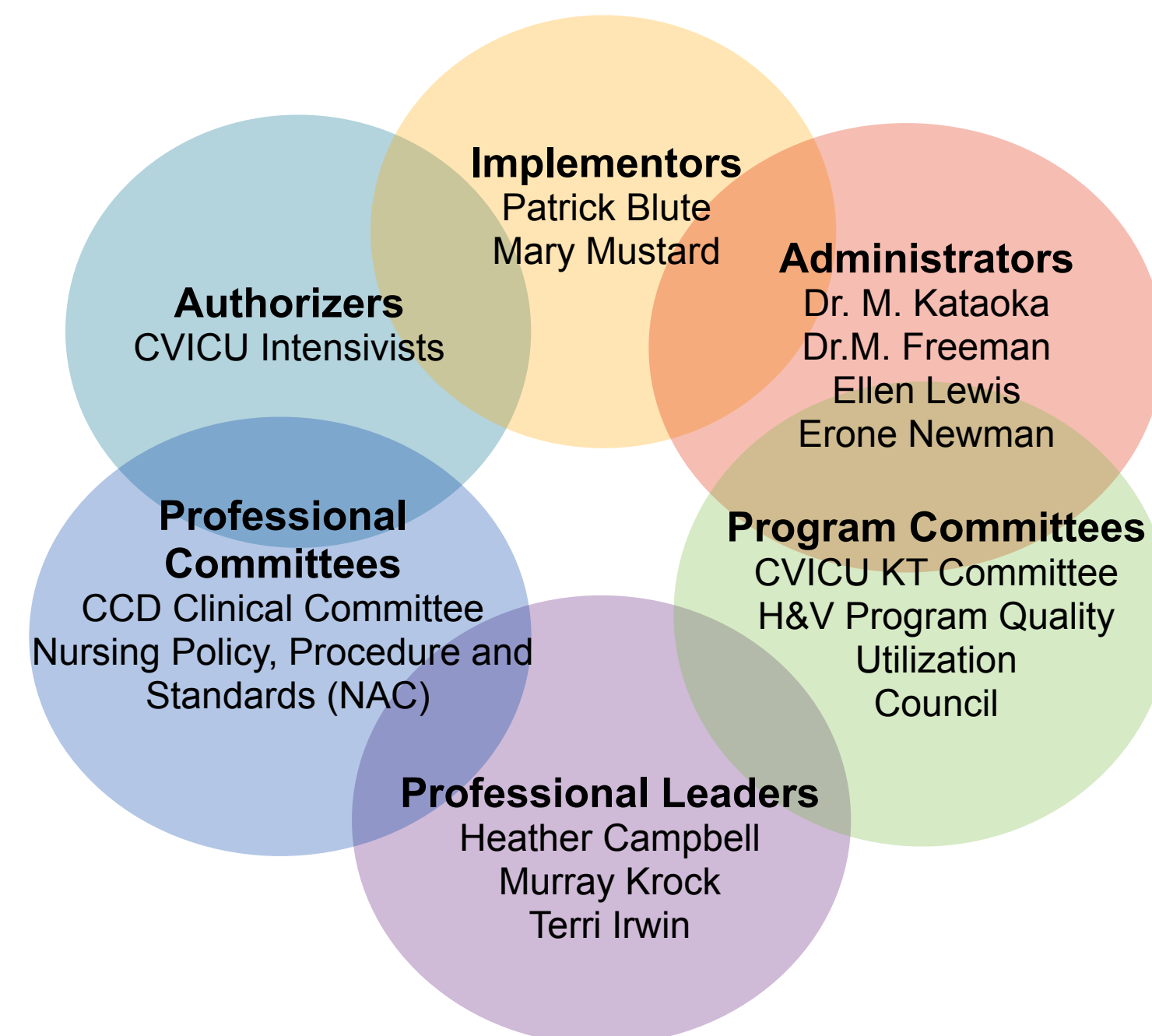
AIM STATEMENT

Submit Medical Directive to stakeholders, facilitate revisions & develop educational package

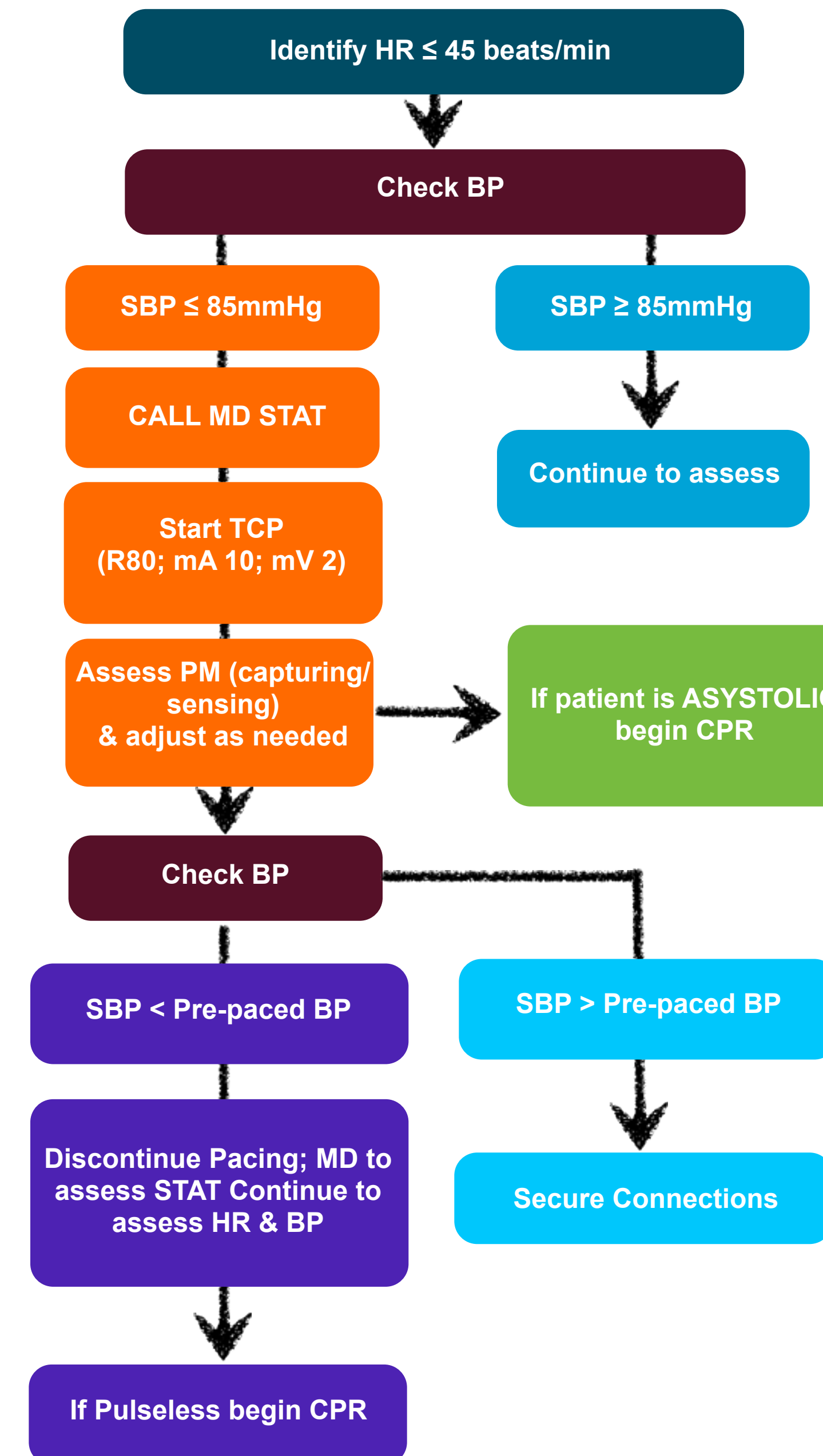
HOW DO WE KNOW CHANGE IS AN IMPROVEMENT?

- ❖ OUTCOME MEASURES:
 - ❖ To begin education of CVICU RN's by June 2013 (achievement of 90%+ on test)
- ❖ PROCESS MEASURES:
 - ❖ Receive approval of medical directive from stakeholders
 - ❖ Create educational package and exam
- ❖ OVERALL OUTCOME:
 - ❖ Education and certification of all CVICU RNs for application of TCP
- ❖ OVERALL PROCESS:
 - ❖ Time of application of TCP

TCP STAKEHOLDER TEAM: Who's Involved?



PROCESS MAPPING: The Application of TCP



THE APPLICATION OF TCP: An Experience with 20 patients

- ❖ DATA COLLECTION:
 - ❖ Took place over 8-weeks (February 11 - April 8, 2013)
- ❖ INCIDENCE:
 - ❖ 20 cases evaluated ~ 1.8% of all cardiac surgery cases
- ❖ PATIENT DEMOGRAPHICS:
 - ❖ Gender: 40% Female & 60% Males
 - ❖ Age Range: 56-88 years
 - ❖ Shift: 40% Days (07:30-19:30) & 60% Nights (19:30-07:30)
- ❖ OUTCOME 1 - TCP TIME
 - ❖ Average: 1.25mins for MD's to initiate pacemaker
- ❖ OUTCOME 2: AVERAGE ICU LOS
 - ❖ < 24hrs for all patients



LESSONS LEARNED

- ❖ PROCESS:
 - ❖ Credibility of the Benefits
 - ❖ Stakeholders involved directly in process
 - ❖ End users (CVICU RNs) aware and engaged in process of TCP initiation
 - ❖ Benefit to patients are direct and clear (no change in LOS)
- ❖ Effectiveness of the System
 - ❖ Through staff and stakeholder engagement modification of educational packages, TCP process, criteria etc. can be continually evaluated
 - ❖ Staff, unit leadership and hospital leadership engagement from the onset of the project was necessary for success
 - ❖ Staff view this change as an efficiency (for care initiation)

SUSTAINABILITY PLANNING

- ❖ All new RN hires trained in TCP application procedure
- ❖ Existing Staff
- ❖ Skills recertification for TCP application: Every 2-years
- ❖ Skills *refresher* offered during ICU skills day
- ❖ Educational Package & Policy Reviewed: Every 3-years