Transcutaneous Pacing Guideline

1. Purpose

The purpose of this guideline is to minimise unwanted variation in clinical practice and follow best practice guidelines for the care and management of WA Country Health Service (WACHS) patients having transcutaneous pacing.

This guideline is applicable for critical care areas such as the emergency department (ED), intensive care unit (ICU), high dependency unit (HDU) and perioperative areas.

2. Guideline

Transcutaneous pacing is a medical emergency response (MER) procedure for patients whose haemodynamic status is significantly compromised due to bradycardia which is not responding to drug therapy, such as atropine.

ATTENTION

Where basic life support is the required intervention, assessment and preparation for transcutaneous pacing must be provided with minimal interruption to cardio-pulmonary resuscitation (CPR).

In the event of ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT), defibrillation is the required treatment and should be performed urgently in accordance with the Advanced Life Support (ALS) Algorithm.

Note: staff should be aware of the location of the defibrillator in their site that has pacing capabilities. Not all defibrillators have this function. Refer to the defibrillator operational manual for instructions on use.

Transcutaneous pacing must be provided by staff with the appropriate skills and training. Information on transcutaneous pacing can be accessed via the WACHS Library: 'ClinicalKey – Transcutaneous Pacing' (procedure videos and information). This resource covers an introduction, indications, contraindications, equipment, procedure, and post-procedure care.

A registered nurse with current ALS competency and transcutaneous pacing within their scope of practice, may initiate emergency transcutaneous pacing without a medical officer (MO) present, when the patient is demonstrating signs and symptoms of haemodynamic compromise. The common symptoms of bradycardia include syncope (fainting), shortness of breath, dizziness or chest pain.[1]

WACHS staff are to provide relevant and comprehensive information regarding the proposed treatment to the patient that is appropriate in terms of the patient's language and communication needs, health literacy, and culture.

The patient and family/carer should be given the opportunity to ask questions and be heard and afforded the time and support to understand the information presented.

Whenever there is uncertainty about English proficiency, language services must be engaged in accordance with MP 0051/17 Language Services Policy. Aboriginal Liaison Officers should be accessed as needed.

Transcutaneous pacing is unnecessary for haemodynamically stable patients. However, pacing pads should be applied to the patient, with explanation and consent, to allow for rapid pacemaker activation if haemodynamic instability develops.

2.1 Staff resources

The following resources are available for staff to use to support clinical practice:

- Patient Management checklist – covers key points prior to pacing including patient preparation, equipment, pad placement, monitoring, documentation.
- Pacing checklist – covers demand external pacing, standby demand pacing and asynchronous pacing/non-demand pacing.
- Troubleshooting guide – common issues, causes and interventions.

3. Roles and Responsibilities

Staff are to work within their scope of practice, level of education and training, and job role.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS, and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

This guideline will be evaluated by relevant managers through routine clinical incident investigation processes and consumer feedback review.

This guideline will be reviewed as required to confirm its effectiveness, relevance, and currency, facilitated by the specified review contact at a minimum every five years or unless otherwise indicated by emergent clinical risk or best practice changes occur.

5. References

1. ANZCOR. Guideline 11.9 – Managing Acute Dysrhythmias [Internet] 2025 [cited 20 August 2025]

2. Jevon P. Cardiac monitoring: part 3: external pacing. Nursing Times. 2007;103(3):26-27 [Accessed 08 July 2025]

3. Eates M. Temporary cardiac pacing. UpToDate. Last updated on 16 April 2024

[Accessed 08 July 2025].

4. Beyerbach DM. External pacemakers [Internet]. Newark USA: Medscape [Updated Oct 2019] [Accessed 08 July 2025]

5. Sovari AA, Kocheril AG and Assadi R. Transcutaneous Cardiac Pacing Periprocedural Care [Internet]. Newark USA: Medscape [Updated 28 Oct 2021] [Accessed 08 July 2025]

6. K Craig. How to provide transcutaneous pacing. Nursing [Internet]. April 2006; Volume 36: p22-23 [Accessed 08 July 2025]

7. Royal Perth Bentley Group External Transthoracic Cardiac Pacing Management NPS July 2024 [Accessed 08 July 2025]

6. Definitions

Term	Definition
Aboriginal	Within Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. No disrespect is intended to our Torres Strait Islander colleagues and community.
Capture	Electrical capture is the occurrence of a QRS complex following a pacing spike and is detected by examining an electrocardiogram. This is confirmed by mechanical capture whereby the pulse is palpated and confirmed as been consistent with the heart rate displayed on the monitor.
Demand Pacing	A pacing stimulus is delivered to the myocardium if the intrinsic heart rate falls below the rate set on the pacemaker.
Fixed Rate Pacing	A pacing stimulus is delivered to the myocardium at a programmed fixed rate. This is also known as asynchronous ventricular pacing.
Transcutaneous Pacing	Also known as external cardiac pacing or transthoracic pacing, it is the delivery of a small electrical current, using externally placed pads, to stimulate myocardial contraction. It is indicated for an acute and reversible cause until more permanent means of pacing is achieved.
Threshold	Otherwise known as milliamps (Ma), is the pacing threshold and amount of energy that will stimulate a consistent electrical response in the heart.

7. Document Summary

Coverage	WACHS wide
Audience	Medical officers and nurses working in critical care areas such as the ED, ICU, HDU and perioperative areas that perform transcutaneous pacing.
Records Management	Health Record Management Policy
Related Legislation	*Carers Recognition Act 2004* (WA) *Health Practitioner Regulation National Law (WA) Act 2010* (WA) *Medicines and Poisons Act 2014* Medicines and Poisons Regulations 2016 *State Records Act 2000* (WA)
Related Mandatory Policies / Frameworks	• MP 0122/19 Clinical Incident Management Policy • MP 0175/22 Consent to Treatment Policy • MP 0051/17 Language Services Policy
Related WACHS Policy Documents	• Clinical Documentation Policy • Consent to Treatment Policy • Medication Prescribing and Administration Policy • Patient Identification and Procedure Matching Policy • Recognising and Responding to Acute Deterioration Policy
Other Related Documents	• WACHS Transcutaneous Pacing - Pacing checklist • WACHS Transcutaneous Pacing - Patient management checklist • WACHS Transcutaneous Pacing - Troubleshooting guide
Related Forms	• MR140A Adult Observation & Response Chart AORC
Related Training	ClinicalKey – Transcutaneous Pacing (via WACHS Library)
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 4729
National Safety and Quality Health Service (NSQHS) Standards	1.27, 2.04, 2.06, 2.07, 6.03, 6.06, 6.09, 8.03, 8.04, 8.06, 8.10, 8.11, 8.13.
Aged Care Quality Standards	Nil
Chief Psychiatrist's Standards for Clinical Care	Nil
Other Standards	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
3.00	8 October 2025	8 October 2025	• moved to guideline format and title changed to reflect contemporary terminology • removal of educational and general information • relocation of patient management, pacing and troubleshooting information to separate checklists and guide to provide easy access for staff at point of care.

9. Approval

Policy Owner	Executive Director Clinical Excellence
Co-approver	Executive Director Nursing and Midwifery Services
Contact	Program Officer Clinical Practice Standards
Business Unit	WACHS Safety Quality and Performance
EDRMS #	ED-CO-15-92680

This document can be made available in alternative formats on request.