Subcutaneous Infusions in the Palliative Care Setting via CADD®-Solis Procedure

1. Guiding Principles

The aim of this procedure is to detail best practice in the management of WA Country Health Service (WACHS) patients receiving subcutaneous medication via a CADD®-Solis pump.

A subcutaneous infusion allows safe and effective continuous and/or a Patient Controlled Subcutaneous Bolus (PCSB) when other routes are inappropriate or ineffective. Pain and other distressing symptoms can be complex, and the severity and management vary from patient to patient.

The Patient Controlled delivery system enables the patient to deliver their own intermittent analgesia.

Infusion pumps can be used to deliver drugs to treat a variety of symptoms in palliative care. Common symptoms include pain, nausea, vomiting, breathlessness, agitation, delirium and increasing respiratory or gastric secretions.

Subcutaneous infusions are primarily prescribed for patients with:

- an inability to swallow
- an inability to absorb oral medications
- uncontrolled pain
- uncontrolled nausea and/or vomiting
- obstructive gastrointestinal disease
- decreased level of consciousness.

For patients in the community, this procedure should be read in conjunction with the Medication Safety for Carers of Palliative Care Patients at Home Procedure.

For subcutaneous infusion via NIKI T34™ Syringe Pump refer to the WACHS Subcutaneous Infusions in the Palliative Care Setting via NIKI T34™ Procedure

All medical, nursing, midwifery and allied health staff are required to work within WACHS Working in Isolation – Minimum Safety and Security Standards for All Staff Policy.

2. Procedure

Clinicians are to meet the requirement of the *Medicines and Poisons Regulation 2016* and the WACHS Medication Prescribing and Administration Policy.

This procedure facilitates safe and effective symptom control, patient choice, carer involvement and supports preferred place of care and death.

It provides clinicians working in WACHS with a safe framework to use and help manage a patient's distressing symptoms and breakthrough symptoms via the subcutaneous route.

In the context of health care, consent to treatment is a person's agreement for a health professional to proceed with a specific proposed treatment; patients are entitled to decide whether they will receive medical treatment.

When there is a person responsible for providing consent on behalf of a patient, he or she must be given the same information as would have been given to the patient if they had the capacity to make the treatment decision (refer to OD 0657/16 WA Health Consent to Treatment Policy).

Patient Controlled Subcutaneous Bolus (PCSB) via CADD®-Solis Pump:

- PCSB is delivered by the CADD®-Solis pump
- Patient suitability, and education for effective and safe use of a PCSB function is to be assessed as per patient condition and capabilities
- The prescriber is responsible for documenting the variations to the CADD®-Solis pump rate, rate range, bolus doses and lock out periods for PCSB usage
- It is usually only appropriate for up to two medications to be prescribed in the cassette
- Registered Nurse could also provide a PCBS dose if the patient is unable to bolus themselves.

2.1 Education – Nursing

For those nurses where it is deemed applicable by their managers that they have the skills related to the set up and management of subcutaneous infusions, they need to:

- Be conversant with the procedure
- Be supervised in the set up and management the pump until confident and competent in their practice
- Local regional palliative care team members can assist in facilitating learning in this area
- Clinicians are to meet the requirement of the *Medicines and Poisons Regulation 2016* and the WACHS Medication Prescribing and Administration Policy
- Consent to treatment is a person's agreement for a health professional to proceed with a specific proposed treatment. Patients are entitled to decide whether they will receive medical treatment. When there is a person responsible for providing consent on behalf of a patient, he or she must be given the same information as would have been given to the patient if they had the capacity to make the treatment decision. WA Health Consent to Treatment Policy-2016.

2.2 Education – Patient

Patient/family/carer Education

- Patients/carers/family need to receive education and written instructions. They are to be given the WACHS Palliative Care Subcutaneous Infusion Devices – Information for patients and carers brochure
- Use of the subcutaneous infusion, including reasons for use, practical care and ongoing management and review must be discussed with the patient/ family/carer prior to commencement
- Advised that the CADD®-Solis pump must not get wet
- To be shown how to change the battery's and recharging the battery pack in the community
- Advised to keep 8 AA batteries in the home if the rechargeable battery is discharged or battery pack malfunctions
- Instructions on regular subcutaneous insertion site observations for signs swelling, redness or leakage and who to report to if issues identified.
- Procedures around dislodgement of the subcutaneous catheter
- Advice on when and how to contact the local community palliative care nurse and/ or after-hours emergency contact
- Instruct patient +/- carer if needing more than 4 PCSB doses in 6 hours - contact palliative care team.

2.3 Medication Management

The Medical Officer (MO) and/or Nurse Practitioner (NP) is responsible for prescribing the medicines used, volume and diluent.

Any change to the prescription or management of the infusion/PCSB requires a new prescription to be written.

Standard medications may be used differently in the palliative care setting, based on well-established practices for which there are varying degrees of evidence.

A wide variety of drugs can be used together in different combinations with no clinical evidence of loss of efficacy.

- **A maximum of three** medications to be combined in the cassette for a continuous infusion
- One medication for PCSB dose unless advised by the Specialist Palliative Care team
- All combinations of medications must be checked for compatibility (refer to the Australian Injectable Drugs Handbook)
- Medications are to be diluted in the cassette with the appropriate/ compatible diluent

> The maximum volume of a bolus subcutaneous injection is 2mL. Above this volume, the injection will be painful for the patient and absorption may be compromised

- Infusions are to be prepared and connected using aseptic technique (refer to WACHS Aseptic Technique Policy)
- Labelling of extension tubing and cassettes (refer to the Australian Commission on Safety and Quality in Health Care (ACSQHC) National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines)
- The Palliative care service may alter this standard dosing regimen as required after patient assessment and monitoring.

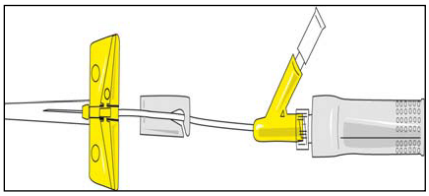
2.3.1 Legislative Requirements

- All medication orders of subcutaneous infusions are to be prescribed and signed by the medical officer or nurse practitioner on the MR 170H Continuous Subcutaneous Infusion Chart Including the drugs, diluent, continuous rate, PCA doses & lock out periods
- Any change to the prescription or management of the continuous rate, PCSB doses, lock out periods requires a new prescription to be written
- Verbal orders for subcutaneous infusions must be in accordance with section 3.5.1 of the WACHS Medication Prescribing and Administration Policy
- Schedule 8 medications are to be prescribed, dispensed, administered, recorded and disposed of in accordance with the WACHS Medication Handling and Accountability Policy and Medication Prescribing and Administration Policy (Department of Health MP 139/20 Medicines Handling Policy December 2020)
- Where only one registered nurse (RN) is available (e.g. Nursing Post) that RN is permitted to check and administer Schedule 8 Medications on their own in accordance with a medical officer's order (refer to section 3.6 of the WACHS Medication Prescribing and Administration Policy)
- All infusion volumes discarded are to be recorded on the MR170H WACHS Subcutaneous Infusion Chart
- Recommend that the RN check calculations of medication doses/volumes with another RN or specialist palliative care service nurse (by telephone as necessary) – use the MR170H.1 WACHS Palliative Subcutaneous Medication Calculation Sheet.

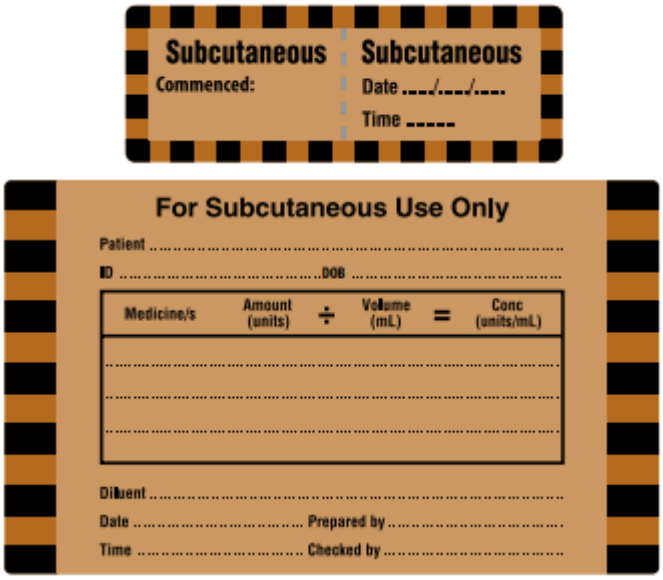
2.3.2 Equipment

- MR170H WACHS Subcutaneous Infusion Chart with documented prescription by medical officer or nurse practitioner
- CADD®-Solis pump -

- Rechargeable battery pack and charging cord or four AA alkaline batteries.
- Saf-T-intima™ catheter -



- Luer-Lok™ extension tubing (length minimum 75cm and max 100cm)
- A “For Subcutaneous Use Only” medication cassette label and line label



- Isopropyl alcohol 70% and chlorhexidine2% skin cleansing swab
- Filter needle if drawing up from greater than 5 glass ampules
- Syringes for drawing up medications
- Transparent occlusive dressing 10cmx10cm (e.g. Tegaderm® or IV3000)
- Adhesive tape e.g. Fixomull®
- Prescribed medication and diluent
- Non- sterile Gloves
- CADD Medication 100ml Cassette Reservoirs
- Luer-Lok ® syringe 50ml
- Red non-venting cap.

2.3.3 Practical Considerations

- A completed “For Subcutaneous Use Only” medication label is to be attached to the cassette and a subcutaneous line label applied to the extension line
- In determining placement of the Saf-T-Intima™ catheter consider patient mobility, skin condition (avoiding areas affected by ascites, oedema, tumour or lesions), comfort and ease of access to insertion site
- Insert a separate Saf-T-Intima™ catheter for breakthroughs PRN medications
- When resisting the catheter, ensure adequate site rotation. If it is necessary to re-site in the same area, the new site should be at least 5cm from the previous insertion site.
- Duration of the infusion for either continuous or PCSB is up to 72 hours. This can only be altered in consultations with the Palliative Care Consultant or Palliative Care GP in the region. The pump will then be appropriately labelled to indicate an alteration in duration of infusion.
- Remove if having an MRI.

2.3.5 Patient monitoring and observations

- The MR170H WACHS Subcutaneous Infusion Chart outlines the observations to be monitored and recorded
- Observations include:
    - Pump monitoring (reservoir volume, bolus given/attempts)
    - Symptom scores (pain, nausea, restlessness)
    - Catheter insertion site assessment (catheter dislodgement; leakage from site; blood in line; inflammation, significant oedema, hardness surrounding the site; pain or discomfort)
      Note: reinsert a new Saf-T-Intima at a new site as clinically indicated
- Observations are conducted every 2 hours for inpatients (to be adjusted according to individual patient's health status) and at every home visit for community patients
- Additional specific monitoring guidelines refer to:
    - MR722.2 WACHS Palliative Care Outcome Measures
    - Care Plan for the Dying Patient suite (CPDP MR723 series)
- **Adverse reactions**:
    - The infusion is to be discontinued immediately and medical advice sought
    - Refer to the WACHS Medication Prescribing and Administration Policy - Adverse Drug Reaction (section 3.7.6).
- **Subcutaneous site reaction**: the catheter should be removed if the following are identified:
    - Catheter dislodgment
    - Leakage from site
    - Blood in line
    - Inflammation, significant oedema, hardness surrounding site
    - Pain or discomfort.

Re-insert a new Saf-T-Intima™ at a new site as clinically indicated

2.3.6 Medication – Filling the medication cassette reservoir

- In some circumstances, e.g. Multipurpose sites (MPS), community clinic, small hospital or nursing post, or in the patient's home, the ability to check the medication with a second nurse may not always be possible. In this instance the second checker is not required as per the WACHS Medication Prescribing and Administration Policy.
- In preparing the cassette, MR170H.1 WACHS Palliative Subcutaneous Medication Calculation Sheet is used and the calculations are independently double checked by another appropriate clinician, either in person (hospital), or if single RN in the community setting – by phone or electronically two registered nurses deemed competent under the scope of nursing practice, or one registered nurse and one medication competent enrolled nurse are permitted to reprogram the CADD®-Solis pump under the direction of the presiding MO prescription.
- Infusions are to be prepared and connected using aseptic technique (refer to WACHS Aseptic Technique Policy).

2.4 CADD®-Solis Procedural information

Refer to the Subcutaneous Infusions in the Palliative Care Setting via CADD® Solis Quick Guide.

> The Quick Guide is **not** to be left in patient's file as incorporates access codes to changing function of pump.

The quick guide covers the following items:

- Battery installation
- Filling the cassette
- Start the infusion with new patient
- Changing a patients current program
- Resetting the reservoir volume without changing the cassette
- Changing the batteries
- Viewing reports.

Care and Cleaning of the pump:

- Clean infusion pump with detergent wipes. They are **not** to be cleaned with alcohol Impregnated wipes
- Follow the manufacturer's instructions on cleaning
- All infusion pumps are to be returned to designated storage points, with battery removed, when not in use.

3. Definitions

Subcutaneous Infusions	Subcutaneous means under the skin. In this type of injection, a short needle is used to inject a drug into the tissue layer between the skin and the muscle. This type of injection is used when other methods of administration might be less effective or less well tolerated
CADD	Continuous Ambulatory Drug Delivery Device. These are lightweight ambulatory infusion pumps
Device/Pump	Tool use to deliver continuous or intermittent drugs to a patient via a subcutaneous route
PCSB	Patient Controlled Subcutaneous Bolus
NP	A nurse practitioner is a registered nurse educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role
MO	Medical Officer
Clinician	Is a health care professional who works with a patient in a hospital, skilled nursing facility, clinic setting or patient's home
Breakthrough Symptoms	Symptoms that occur between regularly scheduled doses of medications

PRN	PRN medications are given on an "as needed" basis for specific signs & symptoms

4. Roles and Responsibilities

All medical, nursing, midwifery and allied health staff are required to work within their scope of practice, appropriate to their level of training and responsibility.

All Health professionals are to adhere and be compliant with related policies and guidelines to make sure that WACHS is a safe, equitable and positive place to be.

Further information may be found via Health Point or the Australian Health Practitioner Regulation Agency as appropriate.

5. Compliance

Failure to comply with this procedure may constitute a breach of the WA Health Code of Conduct (Code). The Code is part of the Integrity Policy Framework issued pursuant to section 26 of the *Health Services Act 2016* (WA) and is binding on all WACHS staff which for this purpose includes trainees, students, volunteers, researchers, contractors for service (including all visiting health professionals and agency staff) and persons delivering training or education within WACHS.

WACHS staff are reminded that compliance with all policies is mandatory.

6. Records Management

All WACHS corporate records must be stored in the approved Electronic Documents and Records Management System in accordance with Records Management Policy.

All WACHS clinical records must be managed in accordance with Health Record Management Policy.

7. Evaluation

Evaluation of this procedure is to be carried out by the manager monitoring clinical incidents attributed to safe administration and prescribing of subcutaneous infusions in the palliative care setting.

All incidents to be investigated, managed, actioned and then tabled at the WACHS Medication Safety Committee for review.

This will be done in collaboration with the Regional Palliative Care Teams via:

- audit of WACHS Patient Complaint/Compliment data
- WACHS Community Palliative Care Clinical Documentation Audit

8. Standards

National Safety and Quality Health Service Standards
Partnering with Consumers Standard: 2.1, 2.2, 2.6
Medication Safety Standard: 4.1, 4.3, 4.14
Comprehensive Care Standard: 5.1, 5.3, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20

National Palliative Care Standards 5th ed, 2018

Nursing and Midwifery Board of Australia Professional Standards

Australian Commission on Safety and Quality in Health Care. National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines

9. Legislation

Medicine and Poisons Act 2014

National Health Act 1953

Medicines and Poisons Regulations 2016

10. References

1. Smiths Medical CADD®-Solis Version 4 Operators Manual 2017 Smiths Medical CADD (R) - Reference Manual
2. Royal Perth Bentley Group, Nursing Practice Standard, Subcutaneous Therapy via a Subcutaneous Catheter, October 2016 [Accessed 7 July 2020]
3. Medicines and Poisons Regulations 2016
4. WA Country Health Service Medication Prescribing and Administration Policy
5. Australian Commission on Safety and Quality in Health Care (ACSQHC) National Standard for User-applied Labelling of Injectable Medicines, Fluids and Lines
6. MP 139/20 Medicines Handling Policy December 2020
7. Palliative Care Outcomes Collaboration (PCOC)
8. Department of Health Western Australia, WA Cancer and Palliative Care Network
9. Australian Nursing and Midwifery Accreditation Council http://www.anmac.org.au/
10. Nursing and Midwifery Board of Australia https://www.nursingmidwiferyboard.gov.au
11. Therapeutic Guidelines: Palliative Care Version 4, 2017

11. Related Forms

MR170H WACHS Subcutaneous Infusion Chart
MR 170H.1 WACHS Palliative Subcutaneous Medication Calculation Sheet
MR722.2 WACHS Palliative Care Outcome Measures

12. Related Policy Documents

WACHS Aseptic Technique Policy
WACHS Subcutaneous Infusions in the Palliative Care Setting Policy via NIKI T34™
WACHS High Risk Medications Procedure

WACHS Infection Prevention and Control Policy
WACHS Medication Handling and Accountability Policy
WACHS Medication Prescribing and Administration Policy
WACHS Medication Safety for Carers of Palliative Care Patients at Home Procedure
WACHS Recognising the Importance of Carers Policy
WACHS Working in Isolation – Minimum Safety and Security Standards for All Staff Policy

13. Related WA Health System Policies

MP 0122/19 Clinical Incident Management Policy 2019
MP 0139/20 Medicines Handling Policy
OD 0657/16 WA Health Consent to Treatment Policy

14. Policy Framework

Clinical Governance, Safety and Quality Policy Framework

This document can be made available in alternative formats on request for a person with a disability

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