



Specialised Medication – Darbepoetin alfa for Correction of Anaemia in Patients with Kidney Disease Guideline

1. Purpose

This document provides guidance for clinicians at WA Country Health Service (WACHS) managed renal services for the prescribing, administration and monitoring of darbepoetin alfa, an erythropoietin stimulating agent (ESA), to treat anaemia in patients with chronic kidney disease (CKD) and end-stage kidney disease (ESKD).

CKD disproportionately affects Aboriginal people and WACHS renal services provide care to many Aboriginal patients across rural and remote Western Australia. Care should be delivered in a clinically safe, culturally respectful and responsive manner and align with the [WACHS Cultural Governance Framework](#) and relevant Aboriginal health policies developed to improve access and outcomes for Aboriginal patients.

This guideline should be read in conjunction with appropriate references, including:

- [Medication Prescribing and Administration Policy](#)
- [Statewide Medication Formulary](#)
- [AusDI Product Information](#).

It is also acknowledged that external renal services may voluntarily adopt this guideline as appropriate.

2. Guideline

Darbepoetin alfa is the ESA of choice prescribed and dispensed at WACHS managed renal services for patients with CKD and ESKD. Further information for prescribing and administration of darbepoetin alfa is also available in the [prescribing information](#) from [AusDI](#).

2.1 Product and storage

Product

The product Aranesp® (active ingredient darbepoetin alfa) is available as pre-filled syringes for intravenous (IV) or subcutaneous (subcut) administration, and injection pens (SureClick® Pen) for subcut administration.

WACHS pharmacy departments do not stock all available strengths of the product and stock is limited to those with an asterisk (*) as indicated in Table 1. Prescribing these products helps ensure timely and consistent supply.

Table 1: Commercially available Aranesp® products

Prefilled Syringe with Auto Needle Guard	SureClick® Pen
• Aranesp® 20 microg/0.5 mL • Aranesp® 30 microg/0.3 mL • Aranesp® 40 microg/0.4 mL* • Aranesp® 50 microg/0.5 mL • Aranesp® 60 microg/0.3 mL* • Aranesp® 80 microg/0.4 mL* • Aranesp® 100 microg/0.5 mL* • Aranesp® 150 microg/0.3 mL*	• Aranesp® 20 microg/0.5 mL • Aranesp® 40 microg/0.4 mL • Aranesp® 60 microg/0.3 mL • Aranesp® 80 microg/0.4 mL • Aranesp® 100 microg/0.5 mL • Aranesp® 150 microg/0.3 mL

* Products stocked by WACHS pharmacy departments

Storage

The product should be stored between 2°C to 8°C and protected from light.

2.2 Indication

Darbepoetin alfa is used for the correction of anaemia associated with CKD and ESKD, under the direction of a nephrologist^{1,2} to alleviate symptoms, improve patient's quality of life and reduce the need for blood transfusion.

The [Statewide Medicines Formulary](#) (SMF) restricts the use of darbepoetin alfa to approved [Pharmaceutical Benefits Scheme](#) (PBS) indications and criteria. The PBS restricts the use of ESAs to treatment of patients with anaemia associated with intrinsic renal disease as assessed by a nephrologist **and** who require a transfusion with a haemoglobin (Hb) less than 100 g/L.

Additional non-PBS indications relevant to haematology and oncology are approved by SMF. Refer to [SMF](#) for the current list of approved indications.

For up-to-date PBS information, visit the [PBS website](#).

2.3 Contraindications

The use of this product is contraindicated in patients with the following conditions:

- pure red cell aplasia (PRCA) – do not use in patients who have developed anti-erythropoietin antibody induced PRCA to any ESA due to cross-reactivity^{1,2}
- known sensitivity to products derived from mammalian cells¹
- known hypersensitivity to darbepoetin alfa or excipients found in Aranesp®.¹

2.4 Precautions

Prior to the prescription and administration, assess the patient for the following risk factors:

- malignancy due to concerns regarding tumour growth, or recurrence, particularly in myeloid cancers^{1,2}
- a history of uncontrolled or refractory seizures¹
- uncontrolled hypertension as treatment may worsen hypertension^{1,2}

- a history of cardiovascular, cerebrovascular or thrombotic events due to increased risk of cardiovascular or thrombotic complications, particularly with rapid increase in Hb (i.e. more than 10 g/L in 2 weeks) and/or higher Hb target (i.e. above 120 g/L).²

2.5 Initial dose and converting from another ESA

Initial dose and target Hb should be individualised based on the patient's symptoms, and potential for adverse effects.³ Initial dose should be prescribed by a nephrologist or by the medical officer (MO)/nurse practitioner (NP) in consultation with the nephrologist.

Darbepoetin alfa may be administered from once a week to once every 4 weeks.^{1,2}

For patients with no prior ESA^{1,2} exposure, the recommended starting dose is Darbepoetin alfa 0.75 microg/kg administered via IV/subcut injection every 2 weeks.

Converting from epoetin alfa²

For patients currently receiving epoetin alfa, calculate the equivalent darbepoetin dose using the following method:

1. Calculate the total weekly epoetin alfa dose.
2. To determine the equivalent weekly IV/subcut darbepoetin alfa dose:
 - For subcut epoetin alfa, divide weekly epoetin dose by 200.
 - For IV epoetin alfa, divide weekly epoetin dose by 240.
3. Convert to a fortnightly dose by multiplying the calculated dose by 2.

Example

To convert from epoetin 4000 units IV three times each week to fortnightly darbepoetin alfa IV:

1. Total weekly epoetin alfa dose = 12,000 units (4,000 units x 3)
2. Equivalent weekly IV darbepoetin alfa dose = 50 microg (12,000 units ÷ 240)
3. Equivalent fortnightly IV darbepoetin alfa dose = 100 microg (50 microg x 2)

Therefore, dose of darbepoetin alfa is 100 microg fortnightly by IV injection.

Converting from methoxy peg epoetin beta (Mircera®)^{4,5}

For patients currently receiving methoxy peg epoetin beta (Mircera®), calculate the equivalent darbepoetin dose using the following method:

1. Determine monthly methoxy peg epoetin beta (Mircera®) dose.
2. Convert to a fortnightly dose by dividing the monthly methoxy peg epoetin beta (Mircera®) dose by 2.



ATTENTION

The dose equivalence between methoxy peg epoetin beta (Mircera®) and darbopoetin alfa is poorly established and likely to be between 0.9 - 1.2 microg darbopoetin alfa: 1 microg methoxy peg epoetin beta.

Start with a 1:1 ratio and monitor Hb at least monthly during dose titration period.^{4,5,6}

2.6 Prescribing

A PBS prescription is required for all community outpatients and same-day admitted patients receiving haemodialysis (HD). PBS prescriptions are not required for inpatients receiving darbopoetin alfa.

Darbopoetin alfa is a Section 100 Highly Specialised Drug and public hospital prescriptions can be written by a nephrologist, MO or NP in consultation with the nephrologist. In addition, prescriptions written through public hospitals are to:

- include the appropriate public streamline code (6294)
- be dispensed at public hospital pharmacies only. They cannot be dispensed by community pharmacies.

Prescriptions written through private hospitals are to include the appropriate private streamline code (9688) and be dispensed at private hospital pharmacies or community pharmacies only.

For patients with ESKD receiving HD, complete the medication prescription on the [MR660.9 WACHS Erythropoietin Stimulating Agent \(ESA\) Chart for Haemodialysis](#).

For all other inpatients ensure that a valid prescription is written on the [MR170A WA Hospital Medication Chart – Short Stay](#).

2.7 Administration

Prior to administration,

- inspect product for discolouration or particulate matter¹
- do not shake the syringe or injection pen as it may denature the protein¹
- allow to reach room temperature prior to administration.¹

IV administration for patients with ESKD receiving haemodialysis

Darbopoetin alfa can be administered at any time during the haemodialysis treatment using a prefilled syringes with automatic needle guard for IV administration.

A haemodialysis clinician within their scope of practice (e.g., registered nurse (RN) or medication administration competent enrolled nurse (EN)) is to administer IV darbopoetin alfa via the venous side of the extracorporeal circuit of the haemodialysis machine.¹

Home haemodialysis patients will self-administer IV darbopoetin alfa during their haemodialysis treatment after receiving education and training at their home therapies unit.

Education for Aboriginal patients should be culturally responsive, localised, and where appropriate involve family, carers or Aboriginal Health Workers.

Subcutaneous administration for pre-dialysis CKD patients and patients with ESKD receiving peritoneal dialysis³

Darbepoetin alfa can be administered subcutaneously by a RN, or a medication administration competent EN, practicing within their scope of practice for inpatients and outpatients. A prefilled syringe with automatic needle guard or a prefilled injection pen may be used depending on patient preference.

Patients may self-administer darbepoetin alfa after receiving education and training in the home or outpatient setting. Education for Aboriginal patients should be culturally responsive, localised, and where appropriate involve family, carers or Aboriginal Health Workers.

Further information regarding nursing scope of practice requirements for medication administration can be located in the Section 2.8 of the [Medication Prescribing and Administration Policy](#).

2.8 Monitoring

Patient receiving darbepoetin alfa require regular monitoring of Hb levels and treatment response. Monitoring frequency is to be based on stage of treatment and dialysis status, with results used to inform dose adjustments and escalation of care as required.

Monitoring frequency

The following monitoring requirements apply to all patients receiving Darbepoetin alfa:

Table 2: Hb monitoring frequency

Stage of treatment and dialysis status	Frequency of Hb monitoring
Treatment initiation & dose adjustments	Monthly
Pre-dialysis CKD patients	Once every 3 months
Dialysis patients (HD* & peritoneal dialysis)	Monthly

* For patients receiving HD, Hb should be monitored pre-dialysis at a mid-week session.

Missed haemodialysis

Haemodialysis clinicians are responsible for ensuring adherence to monthly testing, reviewing results and escalating as required to the nephrologist or MO/NP.

When monitoring is delayed due to a missed HD session, Hb monitoring should be completed at the next attended session.

Haemodialysis clinicians are to complete follow-up with the patient after missed HD to determine if any access barriers (e.g. transport, cultural obligations, competing priorities) are impacting the patient's attendance and facilitate appropriate supports as required (e.g., Aboriginal Liaison Officer or Aboriginal Health Worker and/or Social Worker referral).

Refer to the [Missed Haemodialysis Sessions - Haemodialysis Treatment Guideline](#) for further patient follow-up considerations.

Documentation

Record Hb, current darbepoetin alfa dose and actions taken on the [MR660.9 WACHS Erythropoietin Stimulating Agent \(ESA\) Chart for Haemodialysis](#).

Haemoglobins targets and escalation

Although a target haemoglobin between Hb 95 – 114 g/L^{3,7} is suggested, this is subject to nephrologist review and patient individualisation.

Nephrologist should be notified for further advice if:

- Hb < 80 g/L or
- Hb ≥ 130 g/L.

Maximum dose

The maximum recommended dose of darbepoetin alfa is **150 micrograms weekly**.

2.9 Dose adjustment

[Table 3](#) provides guidance on adjusting the dose of darbepoetin alfa.

The following apply to the review and adjustment of darbepoetin alfa therapy:

- To minimise rapid changes in Hb, avoid dose adjustments more frequently than every four weeks (unless Hb increases by more than 10g/L over a two week period).
- Two haemodialysis clinicians, within their scope of practice (e.g., RN or medication administration competent EN), can complete the dose review and maintain the current dose as per the adjustment guide (Table 3Table 3).
- Where dose adjustment is indicated, this may be performed by a nephrologist or a MO/NP in consultation with the nephrologist.
- The dose may be adjusted by changing the frequency of administration (preferred) or the syringe strength.
- Consider the current Hb, previous Hb and the rate of change when adjusting darbepoetin alfa doses.
- Review the patients clinical state and where unexpected changes in Hb are noted, consider repeating the Hb before changing the dose in case of erroneous readings.

Table 3: Darbepoetin alfa dose adjustment guide

Action	Haemoglobin (Hb) g/L result			
	< 94 g/L	95 – 114 g/L	115 – 129 g/L	≥ 130 g/L
Maintain current dose	If Hb increased by 10-20 g/L in 4 weeks	Target Hb achieved	If Hb decreasing or Hb increased by < 10 g/L in 4 weeks	
Dose adjustment required Notify Nephrologist or MO / NP	If Hb increased by < 10 g/L in 4 weeks. Increase frequency or increase dose by 25%	If Hb increased > 20 g/L in 4 weeks. Reduce frequency or reduce dose by 25%	If Hb increased by ≥ 10 g/L in 4 weeks. Reduce frequency or reduce dose by 25%	
	If Hb increased > 20 g/L in 4 weeks. Reduce frequency or reduce dose by 25%			
Withhold ESA Notify Nephrologist or MO / NP				Withhold. Consider recommencing ESA at reduced frequency or dose.

Patient education

Dose adjustments should be communicated to patients in a culturally responsive manner including use of plain language, allowing time for discussion, and ensuring patients feel safe to ask questions or express concerns.

2.10 Considerations when reviewing haemoglobin

Consider the following when reviewing Hb results:

- ferritin and transferrin saturation to ensure patients are iron replete before initiating ESA or increasing dose³
- concurrent infection or inflammatory condition (often manifesting as elevated C-reactive protein (CRP) as this can reduce ESA effectiveness and avoid increasing dose until resolved if possible.³

3. Roles and Responsibilities

WACHS clinicians will have varied roles and responsibilities in implementing this guideline dependent on their scope of practice. These include:

Nephrologists are responsible for:

- providing clinical governance and oversight of darbepoetin alfa therapy to ensure prescribing and use are consistent with PBS requirements, SMF restrictions and evidence based practice
- providing clinical leadership and decision-making regarding darbepoetin alfa dose adjustments and treatment optimisation, either directly or through delegation to an authorised medical officer or nurse practitioner
- ensuring ESA therapy is reviewed every three months to assess treatment effectiveness, safety and ongoing suitability

- ensuring appropriate prescribing, medication orders, and documentation are completed in accordance with this guideline.

Medical officers are responsible for:

- supporting the safe and appropriate use of darbepoetin alfa by ensuring prescriptions align with PBS requirements and the patient's approved treatment plans
- contributing to ongoing management of darbepoetin alfa therapy through medication prescribing, in collaboration with and under the clinical direction of the patient's nephrologist
- facilitating continuity of care by ensuring prescribing and treatment decisions are accurately documented as per this guideline.

Nurse practitioners are responsible for:

- supporting the safe and appropriate use of darbepoetin alfa by ensuring prescriptions align with PBS requirements and the patient's approved treatment plans
- contributing to ongoing management of darbepoetin alfa therapy through medication prescribing, in collaboration with and under the clinical direction of the patient's nephrologist
- facilitating continuity of care by ensuring prescribing and treatment decisions are accurately documented as per this guideline.

Haemodialysis clinicians are responsible for:

- supporting the safe and effective delivery of darbepoetin alfa therapy in haemodialysis units in accordance with this guideline and their scope of practice
- contributing to ongoing treatment monitoring by obtaining required blood samples, reviewing haemoglobin and other relevant results, and identifying patients that require further clinical review
- ensuring timely and accurate documentation
- facilitating timely escalation of clinical concerns as required to nephrologist.

Registered nurses and Enrolled Nurses who are medication administration competent are responsible for:

- contributing to the safe and effective delivery of darbepoetin alfa therapy by administering treatment to pre-dialysis CKD patients and patients with ESKD receiving peritoneal dialysis in accordance with this guideline and within their scope of practice
- facilitating timely escalation of clinical concerns, abnormal results or treatment-related issues to the relevant nephrologist or delegate medical practitioner to support informed clinical decision-making and continuity of care.

Aboriginal Health Workers/Aboriginal Liaison Officers are responsible for:

- contributing to the safe and effective delivery of darbepoetin alfa therapy to Aboriginal CKD and ESKD patients through supporting culturally safe care, education, communication and engagement.

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

Monitoring of compliance to this guideline is to be undertaken monthly by the WACHS Renal Services Team. Monitoring outcomes will be tabled at WACHS Renal Nursing Advisory Forum and Renal Governance Group meetings and will include review of patient safety and quality data such as clinical incidents involving darbepoetin alfa.

Patient safety and quality data for Aboriginal patients will be monitored to support continuous improvement in culturally responsive care.

This guideline will be reviewed as required to determine effectiveness, relevance and currency. At a minimum, it will be reviewed every three years by the WACHS Renal Services Team in consultation with the WACHS Renal Nursing Advisory Forum, WACHS Renal Governance Group and WACHS Pharmacy Service.

5. References

1. AusDI [Internet]. Aranesp® (Darbepoetin Alfa) Product Information. November 2024 [cited 15 May 2025]. Available from: <https://ausdi-hcn-com-au.wachslibraryresources.health.wa.gov.au/productinformation.hcn.?file=p00412>
2. Australian Medicines Handbook [Internet] Australian Medicines Handbook Pty Ltd. January 2025 [cited 15 May 2025]. Available from: <https://amhonline-amh-net-au.wachslibresoucrs.health.wa.gov.au/chap0ters/blood-electrolytes/drugs-anaemias/erythropoietin-agonists/darbepoetin-alfa>
3. KDIGO. KDIGO 2025 Clinical Practice Guideline for Anemia in Chronic Kidney Disease (CKD) Public Review Draft. November 2024 [cited 15 May 2025]. Available from https://kdigo.org/wp-content/uploads/2024/11/KDIGO-2025-Anemia-in-CKD-Guideline_Public-Review-Draft_Nov42024.pdf
4. Amgen [Internet]. Switching to Aranesp® from Mircera® in haemodialysis patients. 2024 [cited 15 May 2025]. Available from: <https://anzsnasm.com/wp-content/uploads/2024/07/ARANESP-Switch-Leave-Behind.pdf>
5. J Donck, L Gonzalez-Tabares, J Chanliau, H Martin, K Stamatelou, N Manamley et al. Preservation of Anaemia Control and Weekly ESA Dosage after Conversion from PEG-Epoetin Beta to Darbepoetin Alfa in Adult Hemodialysis Patients: The TRANSFORM Study. *Advanced Therapeutics*. 2014; 31: 1155 -1168. DOI: 10.1007/s12325-014-0161-5
6. AusDI [Internet] Mircera® (methoxy polyethylene glycol-epoetin beta) Product Information. 3 November 2023 [cited 2 July 2025]. Available from: <https://ausdi-hcn-com-au.wachslibresources.health.wa.gov.au/productinformation.hcn?file=p02114>
7. BCRenal [Internet]. Hemodialysis Anemia Management Protocol. April 2021 [cited 29 May 2025]. Available from: www.bcrenal.ca/resource-gallery/Documents/Hemodialysis_Anemia_Management_Protocol.pdf

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 Torres Strait Islander peoples.
Chronic Kidney Disease	Chronic Kidney Disease (CKD) is defined as the presence of abnormalities of kidney structure or function, present for 3 months or more, with implications for health.
End Stage Kidney Disease	End Stage Kidney Disease (ESKD) is the stage of kidney disease when a person's kidney function cannot sustain their wellbeing, requiring some form of treatment to maintain life. Also known as end stage renal failure (ESRF).
Erythropoietin Stimulating Agent	Erythropoietin stimulating agents (ESAs) are synthetic forms of the human protein erythropoietin, designed to stimulate the bone marrow to produce red blood cells.
Haemodialysis	Haemodialysis (HD) is treatment for end stage kidney disease (ESKD) via machine and artificial kidney using access to the bloodstream. Treatment can be nurse assisted or performed by patient self-administration.
Haemodialysis Clinician	A Haemodialysis (HD) Clinician is a qualified healthcare professional who provides haemodialysis treatment e.g., registered nurse, enrolled nurse, medication administration competent enrolled nurse and Aboriginal health practitioner.
Nephrologist	A Nephrologist is a senior physician specialised in renal medicine providing diagnosis and management of kidney disease.
Peritoneal Dialysis	Peritoneal Dialysis (PD) is a treatment option for patients with ESKD which uses the peritoneum as a semipermeable membrane to remove excess toxins and fluid from the patient's blood.

7. Document Summary

Coverage	WACHS wide
Audience	Medical, nursing and pharmacy staff working in WACHS managed haemodialysis units, inpatient and community settings where darbepoetin alfa may be prescribed or administered for CKD and ESKD patients.
Records Management	Clinical: Health Record Management Policy
Related Legislation	• Health Services Act 2016 (WA) • Medicines and Poisons Act 2014 (WA) • Medicines and Poisons Regulations 2016 (WA)
Related Mandatory Policies / Frameworks	• MP 0122/19 Clinical Incident Management Policy • MP 0104/19 Medication Review Policy • MP 0077/18 Statewide Medicines Formulary Policy • Clinical Governance, Safety and Quality Policy Framework • Public Health Policy Framework
Related WACHS Policy Documents	• Fiona Stanley Hospital (FSH) Haemodialysis Management Policy – Endorsed for Use in Clinical Practice (EUCP) Policy • Medication Prescribing and Administration Policy • Missed Haemodialysis Sessions - Haemodialysis Treatment Guideline
Other Related Documents	• WACHS Cultural Governance Framework • WACHS Aboriginal Health Strategy 2019-2024
Related Forms	• MR660.9 WACHS Erythropoietin Stimulating Agent (ESA) Chart for Haemodialysis • MR170A WA Hospital Medication Chart – Short Stay
Related Training	Nil
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 4423
National Safety and Quality Health Service (NSQHS) Standards	4.01, 4.02, 4.03, 4.04, 4.10, 4.13, 4.14, 7.04
Aged Care Quality Standards	N/A
Chief Psychiatrist's Standards for Clinical Care	N/A
Other Standards (please specify and include link)	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
1.00	20 October 2026	20 October 2026	New guideline

9. Approval

Policy Owner	Executive Director of Clinical Excellence
Co-approver	Executive Director Nursing and Midwifery Services
Contact	Clinical Nurse Consultant - Renal
Business Unit	Public Health
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