PERITONEAL DIALYSIS (PD) PATIENTS – IRON MANAGEMENT

Cross References (including NSW Health/ SESLHD policy directives)	NSW Health PD2013_043 *Medication Handling in NSW Public Health Facilities* SGH ACU CLIN177 - *Prescribing and Administration of Intravenous Iron Preparations in ACU* SGH CLIN166 - *Ambulatory Care Unit – Referrals And Process: Administration Of Medications and Treatments in – SGH* Routine Bloods for Peritoneal Dialysis; Renal Department Protocol
1. What it is	A clinical business rule to describe a nurse facilitated and medical driven process to maintain optimal iron stores in PD patients
2. Risk Rating	Medium
3. Employees it Applies to	Registered Nurses (RN) trained in peritoneal dialysis Medical Officers (MO) trained in peritoneal dialysis

4. Process

Iron deficiency is one of the common causes of anaemia in PD patients. Routine monitoring of iron studies and iron supplementations are necessary measures in the prevention of iron-deficiency anaemia.

Definitions

Anaemia	patients with Hb <100 g/L
Iron deficient	patients with Ferritin <300 ug/L and/or TSAT <20%
Iron replete	patients with optimal iron store of Ferritin 300-800 ug/L and TSAT 20-50%

4.1 Recommended dosage for iron supplementation

- 500 – 1000 mg iron administered intravenously in a single infusion

Or

- 250 mg iron administered intravenously every week for 4 doses

4.2 Iron and Haemoglobin (Hb) Targets for PD patients

Ferritin	300 – 800 ug/L
TSAT	20-50%
Haemoglobin	100-120g/L

4.3 Procedure

1. PD patients are to have iron studies every 3 months as per Routine Bloods for Peritoneal Dialysis; Renal Department Protocol. Pathology request form can be provided by the medical officers (MO) in renal clinic or by the PD nurses;
2. PD nurse will review Hb and iron studies results;
3. PD nurse will notify and forward a copy to MO of all results outside the iron and Hb target range;

4. PD nurse will flag to MO all patients with Hb <100 g/L with iron deficiency (Ferritin <300 ug/L and/or TSAT <20%). These patients are to be recommended for IV iron infusion.

   Note: Patients who will be NOT recommended to have iron infusion include:

   a. Patients who had IV iron infusion within the past 6 months;
   b. Patients who had prior adverse reaction/allergy to IV iron formulations i.e. iron polymaltose (Ferrosig, Ferrum H) or ferric carboxymaltose (Ferinject);
   c. Patients known to have acute bleeding;
   d. Patients with active infection;
   e. Patients with iron overload (Ferritin >800 ug/L and TSATS >50%)
   f. Iron replete patients

5. 2 weeks after IV iron infusion, patient is to have repeat iron studies and Hb. Pathology request form can be provided by the medical officers (MO) in renal clinic or by the PD nurses;
6. PD nurses to review results of repeat iron studies and Hb, notify and forward a copy to MO if results remain outside the iron and Hb target range.

4.4 IV Iron Referral Process

1. MO will refer patients for IV iron infusions to the Ambulatory Care Unit (ACU) by completing the forms and prescription as per SGH_ACU_CLIN177 - *Prescribing and Administration of Intravenous Iron Preparations in ACU* :

   a) Complete an external prescription for Ferinject 500-1000 mg

   Or

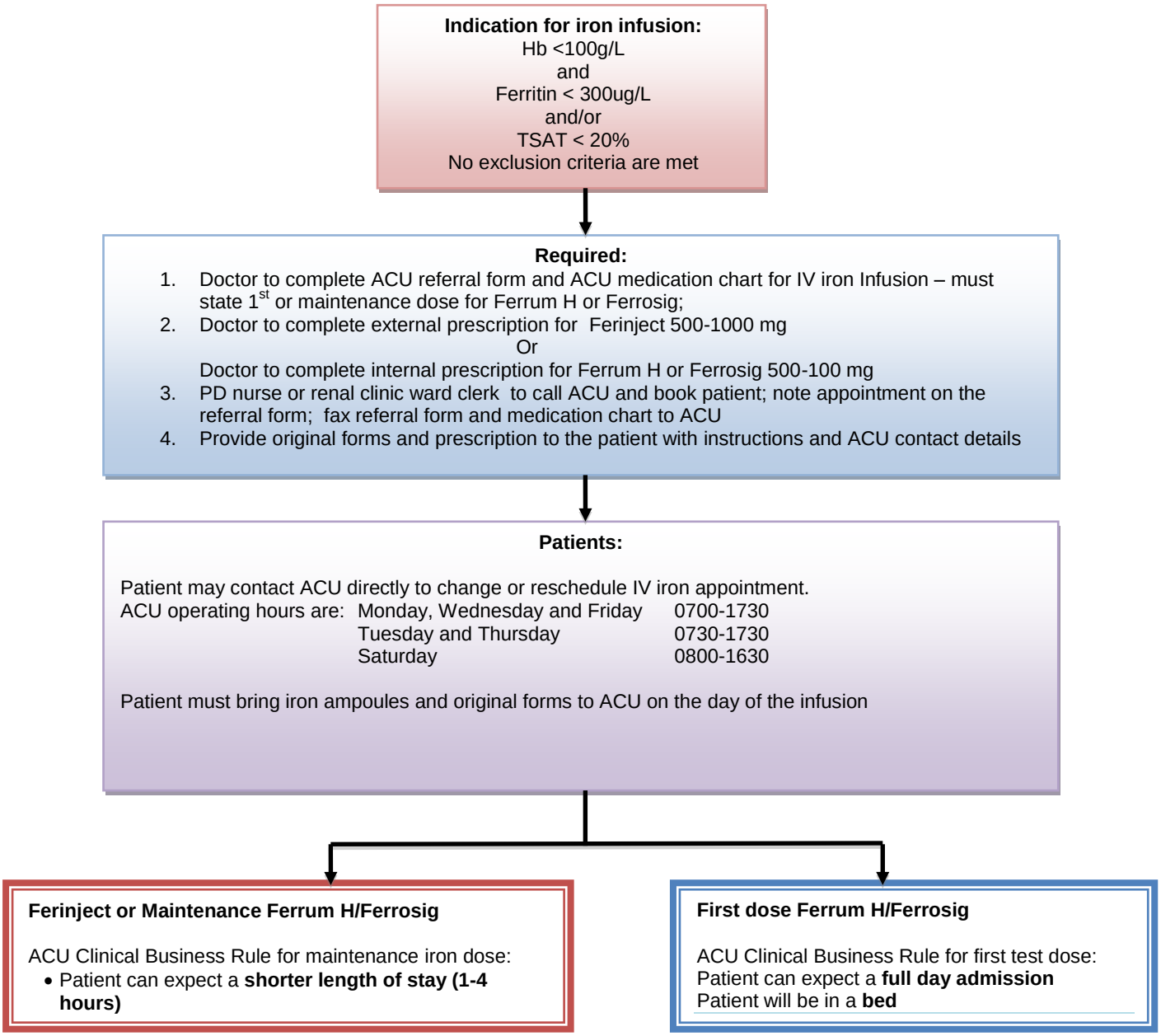
   Complete an internal prescription for Ferrum H or Ferrosig 500-1000 mg

   b) Complete the ACU referral form and ACU medication chart as per SGH CLIN166 - Ambulatory Care Unit – Referrals And Process: Administration Of Medications and Treatments in – SGH :

      - Note if IV iron order is “first” or “maintenance” dose

2. PD nurses or 4W clinic ward clerks will make an appointment for the patient;
3. Write the appointment date and time on the ACU referral form and fax all forms to ACU;
4. Provide patient all the original forms and prescription and ACU contact details;
5. Instruct patient to bring iron ampoules and original forms to ACU on the day of infusion.

4.5 Iron Management Flowchart for PD patients



5. Keywords	Peritoneal Dialysis, Iron infusion, Iron management, Ferinject, IV Iron, Ferrosig, Ferrum H
6. Functional Group	Renal, Peritoneal Dialysis
7. External References	MacGinley, R., Walker, R., and Irving, M. (2012). Use Of Iron in Chronic Kidney Disease Patients. *CARI: Caring For Australasians With Renal Impairment.* Available from: http://www.cari.org.au/Dialysis/dialysis%20biochemical%20hematological/KHA_CARI_Guideline_Fe_in_CKD_16_July_2013.pdf McMahon LP and Macginley R. (2012). KHA-CARI guideline: Biochemical and Haematological Targets: Haemoglobin concentrations in patients using erythropoietin-stimulating agents. *Nephrology*; 17(1): 17-9. Ferric Carboxymaltose (Ferinject) for Iron-Deficiency Anaemia. (2014) Available from: http://www.nps.org.au/ data/assets/pdf_file/0010/256780/Ferric-carboxymaltose.pdf Keating, G. (2014). Ferric Carboxymaltose: A Review of Its Use in Iron Deficiency. *Drugs;* 1-27. doi: 10.1007/s40265-014-0332-3 Larson, D. S., & Coyne, D. W. (2014). Update On Intravenous Iron Choices. *Current Opinion in Nephrology and Hypertension*; 23(2), 186-191 110.1097/1001.mnh.0000441154.0000440072.0000441152e
8. Consumer Advisory Group (CAG) approval of patient information brochure (or related material)	Not applicable
9. Implementation and Evaluation Plan Including education, training, clinical notes audit, knowledge evaluation audit etc	Included in the education tools developed to assist nurses in increasing their knowledge to the care of patients on peritoneal dialysis i.e. Renal care flip chart, advance and basic PD learning package and PD orientation package Monthly inservice education by PD CNC/nurses to all renal nurses PD tutorial to Junior Medical Officers by the PD CNC at the beginning of renal rotation.
10. Knowledge Evaluation	Q1: When is iron infusion/supplementation required? A: Iron infusion/supplementation is recommended for PD patients with Hb <100 g/L and iron deficiency (Ferritin <300 ug/L and/or TSAT <20%). Q2: What are the exclusion criteria for iron infusion? A: Iron infusion is not recommended for: • Patients who had IV iron infusion within the past 6 months; • Patients who had prior adverse reaction/allergy to IV iron formulations i.e. iron polymaltose (Ferrosig, Ferrum H) or ferric carboxymaltose (Ferinject);

	• Patients known to have acute bleeding; • Patients with active infection; • Patients with iron overload (Ferritin >800 ug/L and TSATS >50%) • Iron replete patients Q3: What is the monitoring required after the patient receives iron Infusion? A: 2 weeks after IV iron infusion, patient is to have a repeat blood test for iron studies and Hb. PD nurses will review the results and notify/forward to MO if results remain outside the iron and Hb target range
11. Who is Responsible	Director of St George and Sutherland Renal Service. Nursing Unit Manager, Dialysis Unit

Approval for PERITONEAL DIALYSIS (PD) PATIENTS – IRON MANAGEMENT * N/A where appropriate	
***Specialty/Department Committee**	Committee title: Peritoneal Dialysis Committee Chairperson name/position: Franziska Pettit, Staff Specialist Date: 29.09.16
***Nurse Manager**	Name/position: Christine Day, Nurse Manager Medicine Date: 13.09.16
***Medical Department Head**	Name /position: Mark Brown, Department Head Renal Services Date: 22.07.16
***Drug and Therapeutics Committee (SGH)**	Chairperson's Name: A/Prof Winston Liauw Date: 08.12.16
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Revision and Approval History

Date	Revision number	Author (Position)	Revision due
September 2016	0	Anna Claire Cuesta (PD CNC)	September 2019

General Manager's Ratification	
Name Leisa Rathborne	Date: 07.12.16