

Iron Deficiency and Anaemia in Oncology Patients

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Introduction

Anaemia is a very common problem in Oncology patients and the causes are multifactorial. They include poor nutritional intake, chronic blood loss, bone marrow suppression by tumour or systemic anti-cancer treatment, chronic kidney disease and importantly, iron deficiency.

The interaction of multiple different causative factors in the same patient means that anaemia can be challenging to manage in this patient population. Symptoms of anaemia can be disabling and are associated with increased morbidity and mortality in cancer patients. It is essential that any potentially reversible factors, such as iron deficiency, are corrected, to give the patient the best chance of recovery from anaemia and its associated complications.

Problem Statement

On a daily to weekly basis, we are failing to proactively investigate anaemia in Oncology patients, which means important causes such as Iron deficiency are under-diagnosed and under-treated.

This has a potential negative impact on patient experience and quality of life and means that we need to use more units of Red Cells to transfuse these patients for anaemia.

Improvement Aims

- Increase testing of haematinics in anaemic Oncology patients on chemotherapy to 50% of those eligible over 6 months.
- Through identifying Iron-deficient patients, increase use of IV Iron to treat this condition so that >50% of anaemic Iron-deficient patients receive IV Iron.
- As a result of these measures, aim to reduce the use of Red Blood Cell transfusion

How will we measure improvement?

Process measure:

- Proportion of anaemic patients (Hb \leq 100) having Ferritin and/or Transferrin Saturation checked within the last 3 months

Outcome measures:

- Proportion of eligible patients receiving IV Iron infusions
- Number of IV iron infusions administered in a given period

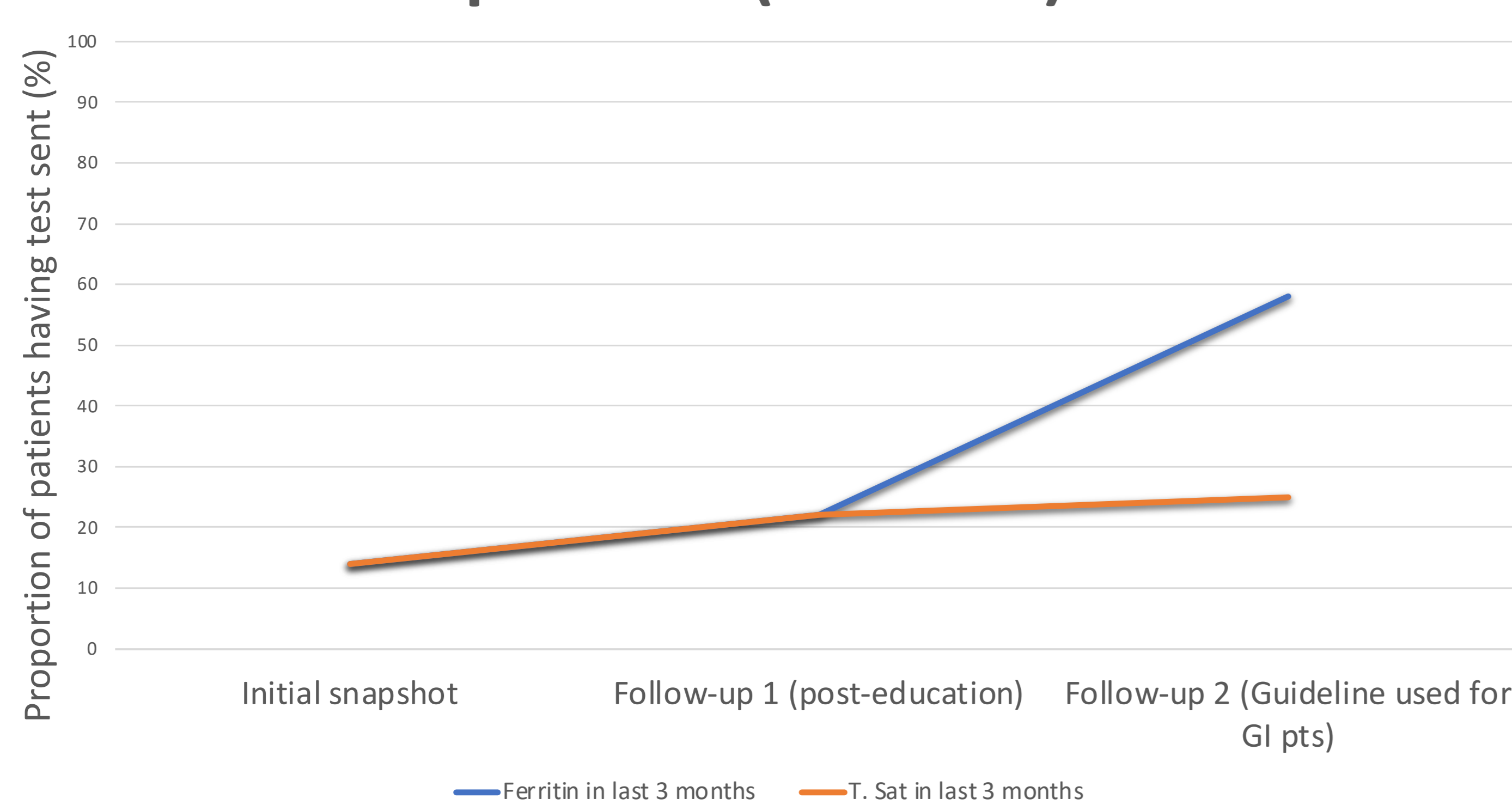
Comparison of IV Iron and Blood

IV Iron Infusion	Blood Transfusion
Infusion time 15-30 minutes	Infusion time 2-3 hours
Lower incidence of adverse reactions	Potentially serious adverse reactions
Availability limited only by manufacture	Finite resource: national blood shortage
Usually require 1 infusion: £170-270 each	Usually require repeat transfusions: £160 each
Slower Hb response: 2-4 weeks	Faster Hb response: immediate

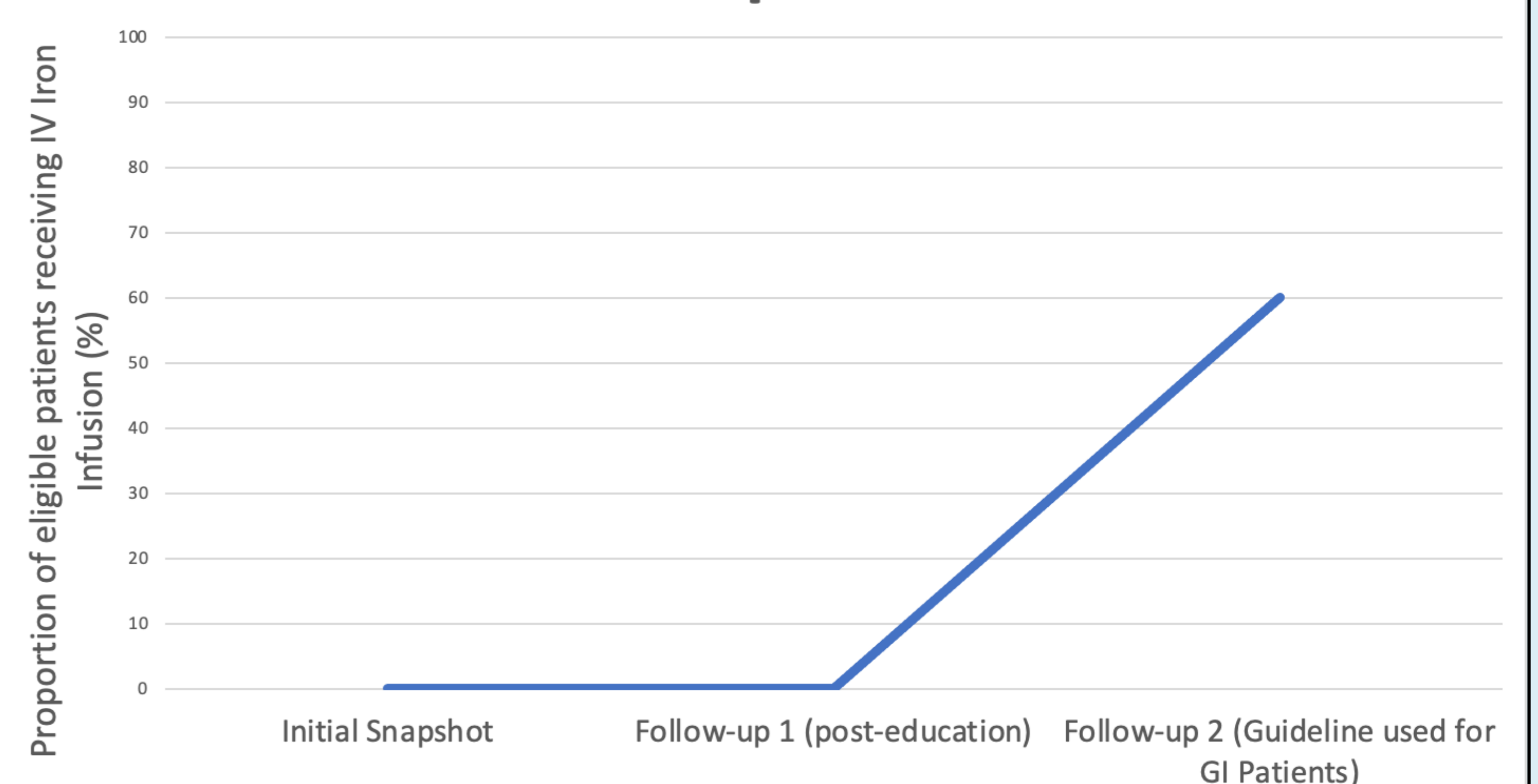
Methods

1. Baseline prevalence of haematinics testing was evaluated across a representative sample of patients in chemotherapy clinics across 1 week in the Gloucestershire Oncology Centre, Cheltenham
2. Using this data, an estimate was generated of the number of anaemic patients in the whole patient population of the department and how many patients each week may be eligible for IV Iron treatment
3. Driver diagrams were used to rationalise and target ideas for improving our service
4. Educational sessions were delivered to small targeted groups in the department and on a larger scale at the departmental governance meeting
5. Feedback was gained that a resource was needed for reference in the clinical setting as a rapid aide-memoire of testing requirements and provide a treatment algorithm appropriate for use in Gloucestershire Hospitals
6. After each intervention, repeat measurements were made of the incidence of haematinics testing and use of blood products and IV Iron

Checking Haematinics in Anaemic patients (Hb \leq 100)



Uptake of IV Iron with Education and Guideline implementation



Results

We noticed an increase in the uptake of haematinics testing in the patient population after initial education, though this change was small (from 14% to 22% for both Ferritin and Transferrin Saturation). Upon implementation of a written guideline, haematinics testing further increased, with 58% of eligible patients having Ferritin checked and 25% for Transferrin Saturation.

Our data suggests that the increase in testing for Iron deficiency in anaemic patients meant that there was a subsequent increase in prescription of IV Iron to treat deficiency. Following implementation of the Trust guideline, 60% of eligible patients with cancers of the gastrointestinal tract in our snapshot received IV Iron.

IV Iron data from pharmacy suggests approximately a 6- to 7-fold increase in the use of IV Iron across comparable time intervals pre- and post-intervention.

Future Work

- We will roll out the use of the Trust guideline to the whole patient cohort served by the Oncology department
- We will engage Clinical Nurse Specialist teams to raise awareness and prompt testing and treatment of anaemia and iron deficiency
- We aim to demonstrate a reduction in Red Cell usage across the department, sparing blood resources
- We should aim to involve patients in education about anaemia and iron deficiency and provide ways for patients to reliably report symptoms to prompt testing
- We should ensure good quality clinical documentation of testing and decisions about treatment of anaemia to ensure continuity of care between different clinicians
- We should investigate use of the Electronic Patient Record to, where possible, automate the process of identifying iron deficiency.