

# Peri-Operative Anaemia in Elective Surgical Patients: An 'Iron-Clad' Approach

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## INTRODUCTION

The National Institute for Clinical Excellence (NICE) states that pre-operative anaemia is associated with increased post-operative morbidity and mortality.<sup>(1)</sup> Over one-third of elective surgery patients are identified as having pre-operative anaemia.<sup>(2)</sup> Effective identification, diagnosis and management of peri-operative anaemia is therefore required to reduce surgical risk.<sup>(3)</sup>

## METHODS

In the absence of a clear service pathway for management of peri-operative anaemia in elective surgical patients in our hospital trust, a multidisciplinary (MDT) collaboration was launched by the Anaesthetic department in 2018. The working group consisted of motivated and enthusiastic anaesthetists, specialist nurses, theatre and ward staff. The group established the following services and methods for anaemia management:

### 1. Scheduled Care Improvement Programme (SCIP)

The working group published a pre-operative anaemia guideline, standard operating procedure (SOP) and 'Patient Flow' system (Fig. 1).

### 2. Intravenous (IV) Iron Infusion Service and Electronic Database

Through collaboration with the Day Surgery Unit (DSU), the working group formulated a pathway for IV iron infusion. The process involved a robust booking service to deliver IV iron efficiently within DSU. Patients accessing this service were added to an electronic database.

### 3. Audit and Quality Improvement Projects (QIPs)

Utilising the IV iron database, several dedicated junior anaesthetic trainees led numerous audit and QIPs (Fig. 2), measuring various outcomes and focussing on the efficacy of peri-operative anaemia management.

## RESULTS

- Since inception of the peri-operative anaemia service in 2018, 199 patients have received IV iron infusions. The service has received extremely positive feedback from patients (Patient Satisfaction Survey 2018) regarding its efficiency.
- The IV iron database has allowed for data collection to evaluate outcomes and service efficacy. Furthermore, it has generated multiple audits and QIPs (Fig. 2). Findings from these have been presented at local and regional level.
- Formation of a strong work ethic within the MDT has been fostered.
- Recognition of this work was highlighted through receiving the Clinal Service Centre 'CHATi' Award, a PHT management prize recognising innovation in patient care.<sup>(4)</sup>

### Audit and QIPs of Peri-operative Anaemia Group

#### Prevalence of Anaemia in Elective Gynaecology Patients (2018)

- 25% of patients are anaemic, poor pre-op investigation, re-audit following education planned.

#### Prevalence of Iron Deficiency in Ante-Natal/Post Natal Patients (2018)

- High prevalence of iron deficiency, low compliance of oral therapy, IV iron to roll out in this area.

#### Pre-Operative Anaemia and Transfusion in Elective Urology Patients (2018)

- Inadequate investigation for pre-operative anaemia in cancer patients undergoing surgery.

#### Creation of IV Iron 'Blood Test Bundle' QIP (2018)

- MDT with haematology & pathology to minimise patient inconvenience and maximise efficiency.

#### Prevalence of Anaemia in Hip Fracture Patients (2019)

- Anaemia in this cohort noted with the aim to identify IV iron suitability.

Figure 2 Audit Projects Undertaken by the Working Group Since 2018

## CONCLUSIONS

The collaborative working group have established an efficient pathway in the identification and management of peri-operative anaemia, improving the care delivered to elective surgery patients. Through a multi-disciplinary and multi-faceted approach, we have endeavoured to broaden our scope for audit and research. Following the initial success, there is now roll-out of the service to non-cancer specialties from 2019. Work is ongoing to continually improve the service.

## ACKNOWLEDGEMENTS & REFERENCES

1. NICE Quality Standard (QS), QS138 Blood Transfusion 2016. Available from [www.nice.org.uk](http://www.nice.org.uk)
2. Clevenger & Richards. Pre-operative anaemia. *Anaesthesia* 2015 70 (suppl 1), 20-28.
3. Klein et al. The incidence and importance of anaemia in patients undergoing cardiac surgery in the UK-the first association of cardiothoracic anaesthetists national audit. *Anaesthesia* 2016, 71: 627-635.
4. Critical Care, HSDU, Anaesthetics & Theatre Innovation Award, CHATi Award.

### Patient Flow: IV Iron Infusion-Elective Surgical patients

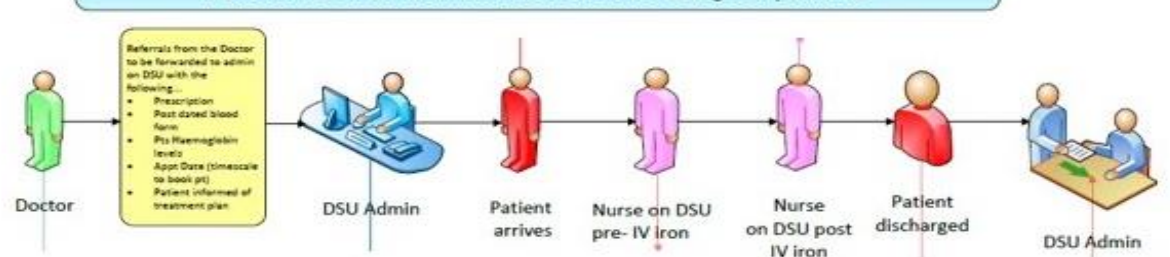


Figure 1 Pathway for IV Iron Infusions in Elective Surgical Patients (Adapted for Poster)