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Pre-Operative Anaemia and Length of Stay in Primary Arthroplasty Patients

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Summary:
Undetected pre-operative anaemia in elective primary arthroplasty patients increases the length of inpatient stay.

Abstract:
BACKGROUND
Untreated pre-operative anaemia can be associated with an increased peri-operative morbidity and mortality after orthopaedic surgery, as well as an increased likelihood in the need for peri-operative blood transfusion.

AIMS
To determine the prevalence of pre-operative anaemia amongst patients undergoing elective primary arthroplasty within our trust and to assess the impact upon the length of stay.

STANDARDS
The Network for Advancement of Transfusion Alternatives (NATA) recommend as part of their guidelines that undiagnosed anaemia should be detected in pre-operative elective surgical patients by a Hb level within 28 days of the surgical procedure, and that the patient's target Hb should thus be normalised in accordance with WHO Criteria (Males >13g/dL-1 and Females >12g/dL-1).

METHODS
195 consecutive patients underwent elective primary hip and knee arthroplasties in Calderdale & Huddersfield NHS Trust from January to March 2014. These were retrospectively reviewed in order to ascertain their pre-operative Hb and the timing of this test before surgery. The length of stay between anaemic and non-anaemic was compared as a secondary outcome and analysed using an independent t-test.

RESULTS
195 patients were included. The mean age was 69.4 years. 134 (68.7%) of these were total knee replacements and 61 (31.3%) were total hip arthroplasties. The male to female ratio was 84:111. 188 patients (96%) had their Hb checked within 28 days of surgery, 78 (40%) of these patients were biochemically anaemic: 31 males (36.9%) and 47 females (42.3%). The mean length of stay was significantly lower for non-anaemic patients compared to anaemic patients at 3.8 (±2.8) days and 5.3 (±2.8) days respectively ($p<0.05$)

CONCLUSION
The vast majority (96%) of patients in our trust had their Hb checked within 28 days of elective arthroplasty surgery. However, 40% of patients went on to have their surgery despite a biochemical anaemia. This was associated with a significantly greater mean length of stay. Thus, increased compliance with NATA guidelines needs to be enforced for the benefit of reducing inpatient hospital stay.