

Pre-operative Anaemia Colorectal and Orthopaedic Surgery

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News > Kent News > NHS

Under pressure A&E units at Kent hospitals have warned care and safety could be 'compromised' due to high patient numbers

The highest level of alert has been activated at hospitals across Kent due to high patient numbers



East Kent Hospitals University NHS Foundation Trust







Pre-operative Anaemia



Anaemia is a perioperative risk factor Perioperative transfusion An undiagnosed underlying cause?



We are all getting older...





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Percentage of population aged 65 and over

Source: Office of National Statistics 1992 to 2008 figures based on mid-year population estimates, 2009 to 2031 figures based on 2006 based national population projections

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	Local authority	2010	2031
	Ashford	16.6	22.6
	Canterbury	18.0	21.8
	Dartford	14.3	18.7
	Dover	20.7	29.3
	Gravesham	16.4	21.6
	Maidstone	17.3	24.2
	Sevenoaks	18.2	23.5
	Shepway	21.2	29.4
,	Swale	16.6	23.9
	Thanet	21.5	28.3
	Tonbridge & Malling	16.7	22.9
	Tunbridge Wells	17.5	17.5
	Medway	14.2	14.2





And more pale



Anaemia 30 M 25 E F 20 15 % 10 5 60-64 70-74 75-79 80-84 85-89 90-94 95-99 100+ 65-69 Age Melzer D et al 2015



Almanac of Disease Profiles in Later Life, Age UK, 2015

- Progressive prevalence increase with age
- Decline greater for men
- 1/3 nutritional, 1/3 chronic inflammation +/- FID, 1/3 unexplained





Pre-operative anaemia



Population	Prevalence	Ref:
Global, >60 yrs old	24%	WHO data, 2005
Pre-op, all specialities, USA	30%	Mussallan, 2011
Pre-op, hip and knees, UK	53%	Nat. Audit of Blood Tx, 2015
Pre-op, colorectal, UK	69%	Nat. Audit of Blood Tx, 2015



Munoz et al. Blood Transfus. 2015 Jul; 13(3): 370-379.





Pre-operative anaemia: causes

- Nutrient deficiency
 - Iron
 - Folate
 - B12
- Chronic inflammatory state
 - CKD
 - Anaemia of Chronic Disease

Multiple co-existing factors









East Kent

NHS Foundation Trust







Yes, to improve surgical outcome Hospitals University NHS Foundation Trust



Beattie WS et al. Anesthesiology 2009;110:574-81

We

care

Yes, to reduce blood transfusion East Kent Hospitals University

Article:SLA202813 Date:June 9, 2012 Time: 17:46								
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We care



Treating Iron Deficiency



Fundamental differences in surgical pathways: Colorectal: 62 days (cancer) Orthopaedics: 18 weeks

Booking to theatre: "Preassessment time" Colorectal: 18 days Orthopaedics: 60-90 days

National Audit of Blood Transfusion, 2015





Oral and IV iron

Oral Iron



IV iron in cancer pathways



- 62 Day Target, NHS England 2015
 - Start first definitive treatment (FDT) within 62 days of receipt of urgent referral

6.4 Enabling Treatments

The enabling treatments that can be classed as FDTs are:

- colostomy for bowel obstruction
- insertion of oesophageal stent
- non-small cell lung cancer stent
- ureteric stenting for advanced cervical cancer
- insertion of a pancreatic stent if planned to resolve jaundice before the patient has a resection or starts chemotherapy
- Gastrojejunostomy
- Monofer Infusion
 - Cystodiathermy

Other enabling treatments can only be used to end a pathway when a patient is to have X enabling treatment, is admitted for this and remains as an inpatient between the enabling treatment and the main anti-cancer treatment i.e. if they both take place within the same hospital provider spell then the date of admission ends the 62 day period even though the enabling treatment was given first within that spell.



NICE Standards (2016)



- People with iron-deficiency anaemia who are having surgery are offered **iron supplementation** before and after surgery.
- Adults who are having surgery and expected to have moderate blood loss are offered **tranexamic acid**.
- People are clinically reassessed and have their haemoglobin levels checked after each unit of red blood cells they receive, unless they are bleeding or are on a chronic transfusion programme.
- People who may need or who have had a transfusion are given verbal and written information about blood transfusion.







Current practice, far from ideal



Treating Iron Deficiency



Creating a formal pathway: Principles

- Patient focused
- Evidence-based
- Avoid delays
- Cost effective
- Primary and secondary care



Pre-op anaemia pathways



The earlier the better: at decision to operate

- Hb and ferritin
- Colorectal: IV iron
- Orthopaedics: PO iron, IV if ineffective

One-stop pre-op nursing assessment





We

care

Ideal colorectal pathway





care

Ideal THR / TKR pathway



IV Iron in East Kent







IV Iron in East Kent







Unanswered Questions



Does optimising pre-op [Hb] with iron actually improve outcomes?

Do enhanced recovery programmes "require" greater Hb concentrations?



Iron and favourable outcomes



Ann Surg. 2016 Jul; 264(1): 41–46. Published online 2016 Jan 27. doi: 10.1097/SLA.000000000001646 PMCID: PMC4902320

The Important Role for Intravenous Iron in Perioperative Patient Blood Management in Major Abdominal Surgery

A Randomized Controlled Trial

Bernd Froessler, MD, MClinSc,*[†] Peter Palm, MD,* Ingo Weber, MD,* <u>Nicolette A. Hodyl</u>, PhD,[‡] <u>Rajvinder Singh</u>, MBBS, MPhil,^{§¶} and <u>Elizabeth M. Murphy</u>, PhD^{||}

- RCT in Colorectal Cancer. IV iron vs standard care
- Stopped early after 72 patients
- ABT: 60% relative risk reduction
- LOS: 6 vs 9 days



Iron and favourable outcomes

Blood transfusion?

Length of stay?

Morbidity and mortality?

Probably

Probably

Don't know







Hb for fast-track hips/knees



Age and Ageing 2008; 37: 173–178 © The Author 2008. Published by Oxford University Press on behalf of the British Geriatrics Society. doi:10.1093/ageing/afm161 All rights reserved. For Permissions, please email: journals.permissions@oxfordjournals.org

Anaemia impedes functional mobility after hip fracture surgery

NICOLAI B. FOSS^{1,2}, MORTEN TANGE KRISTENSEN³, HENRIK KEHLET⁴

 Table 2. Associations between anaemia, functional mobility and mobilization on the first three post-operative days in

 487 hip fracture patients

		Walking independently	Walking with human assistance	Not able to walk	Р	Mobilisation (hours out of bed)	
1st post-operative day	No anaemia $n = 317$ Anaemia $n = 170$	52 (16%) 9 (5%)	160 (51%) 103 (61%)	105 (33%) 58 (34%)	0.049	3 (1-5) 2 (0 5-4 5)	0.011
2nd post-operative day	No anaemia $n = 330$	82 (25%)	175 (53%)	73 (22%)	0.007	4 (2-6)	0.024
3rd post-operative day	Anaemia $n = 132$ No anaemia $n = 314$	24 (18%) 124 (40%)	62 (47%) 130 (41%)	46 (35%) 60 (19%)	0.001	3 (1-5.5) 5 (3-7)	0.129
	Anaemia $n = 116$	30 (26%)	47 (41%)	39 (34%)		4 (2.5-6)	













Conclusion Confusion



Pre-op Anaemia is a perioperative risk factor Pre-op Iron therapy may be good Post-op anaemia may be bad Blood is often bad

Simon Rang

